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THE NATURE OF THE GENIUS

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PREFACE

This book is the outcome of my continued interest in the various branches of art as well as science. It is possible to look at a particular work in these fields only from the standpoint of its objective merits: what it has to offer to the mind, the eye or the ear. There is another aspect, besides, and that is, how the originator of the work was able to produce anything of such excellence. It is this second aspect that has always fascinated me.

It is the puzzle of human creation, of the genius. There have been in the past various studies concerned with the problem. Nevertheless, it can be said that a science of the genius does not yet exist. There is today no other way to approach the problem than by illuminating it in an empirical manner, using for the purpose first of all the various works of art and science. In the second place one can make use of biographical information about the men who created the works in question. And in the third place it is possible to utilize available information from the fields of psychology, medicine, biochemistry and some other sciences that appear to have a bearing on the problem.

It is realized that all this is not enough to make a scientific book on the genius. My own thoughts and considerations on the varied aspects of the problem inevitably color the results, as presented, and give them an individual stamp, which, while not always desirable, may be considered advantageous in a book of this nature.

The plan of this study will be developed in detail in Chapter 1. Let us mention here briefly that first the man of genius will be discussed, as a phenomenon in itself, in its relation to society, and in relation to the human species. In the second place the work of the genius will be discussed, and attempts will be made to find, wherever possible, correlations between the man and his work.

While the primary purpose of this study was to satisfy my own

curiosity, it is hoped that it may serve an objective purpose as well. The problem of genius is of general importance, and readers, similarly attracted by it, might find interest in reading this discussion. Even if the general problem as such should not particularly interest the reader, there are so many references to geniuses in everyday life, in books and articles that a clarification of the concepts involved might be of help. For the understanding and appreciation of scientific and artistic achievements a consideration of the uncanny power of their creators and of the many roots of that power might prove helpful too. Wherever it was feasible, illustrations of our deductions by great works of art and science will be found.

And finally, at various places of this discussion, remarks and suggestions about possibilities of further study and even research have been interspersed. Perhaps those remarks might act as stimulus. To think of research along these lines is to think too far ahead, but it is never too early to point out these possibilities and stimulate interest in them, even if an execution of such a project, because of lack of suitable methods, is not feasible today.

The concept of genius, as used in this study, will be found severely restricted in two ways. First, it is used to designate only the truly great among creative men, and second, several fields of activity are excluded altogether from our considerations. These restrictions might not meet with general approval, some might oppose it rather vigorously.

Of course, we ourselves will have to deviate occasionally from this self-imposed restriction; lesser men will be considered, mainly because of the scarcity of the truly great. This matter will be explained in greater detail in Chapters 1 and 2.

One reason for this restriction is our purpose to clarify the nature of the genius. If the concept were used in a wider sense, it would practically coincide with that of highly gifted persons. This, however, would be defeating our own project. To discourse on gifted persons is not the purpose of this essay. Our purpose is to throw some light upon those exceptional and in many ways mysterious individuals that have appeared, and very rarely only, on this earth, the puzzling phenomenon of the true genius.

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THE NATURE OF THE GENIUS

I

THE PROBLEM OF THE GENIUS

1 BASIC QUESTIONS OF THE PROBLEM OF GENIUS

This treatise deals with the genius, a subject as intriguing as it is complex. In many fields of the sciences as well as the arts there are experts who know a great deal about their subjects. Our present topic does not belong to that group, as there are, strictly speaking, no experts who know all about genius. There is, in fact, no such thing as a science of genius.

This has its peculiar advantages. A writer about such a subject does not need to be on the guard all the time; he can make statements without the danger of being continually checked or contradicted by an expert. He thus enjoys quite a bit of freedom, he may even let his imagination wander if he so desires.

We shall endeavour, nevertheless, not to abuse that freedom, and deal with the subject as rigorously as feasible by strengthening our statements with factual material, whenever available.

Let me outline the problem briefly as I see it and the way in which it might be discussed. The question concerns first the person called a genius. Thus the problem is one of biology, psychology and sociology; it has to do with a certain very small group of individuals who, nevertheless, have contributed more to the values of our world than all the rest taken together.

The answer to the question, what is a genius, cannot be limited to the person alone. This is because the very definition of the group hinges on the nature of the values alluded to. These values, constituting the product of the group, require our attention as much as the individuals who created them. From this angle the question is one of the many fields in which human creation is possible, hence, it concerns the analysis of works of all arts, sciences, philosophy, religion and others. This aspect of the matter requires more factual knowledge than does the first, and is, therefore, the more difficult of the two.

Logically, the second question ought to be discussed first, since it supplies the basis for the first. Such a sequence might be called the analytical method.

In our present discussion, the sequence might as well be reversed. It is easier, and we might call it the synthetic or empirical treatment. We will start from known geniuses, attempt a description of their qualities, and, having gained an insight into their nature, shall proceed by describing the essential features of their work. While this sequence is artificial in some ways, it will suit our purpose best. Hence, let us discourse first about the man of genius, as we might appropriately call him, and let us next turn to the work of genius, as we might call the creative product of the man.

This man of genius is a complex creature. It would be difficult to attempt a definition in a nutshell, neither would such a definition be of great value. This is often the case with succinct definitions: hard to visualize and full of exceptions; having allowed for these, we have lost the conciseness. It is then better not to strive to be concise, rather illuminate the subject from all sides until it stands more or less clearly before our eyes. A practical kind of definition will then emerge from such a consideration.

When we think of a genius, whether a Goethe or a Newton, a number of essential characteristics come to our mind, which, curiously enough, are not strictly interrelated, rather quite independent of each other. I wish to emphasize this point, as it is a good basis for the answer we are seeking. There are various facets of this phenomenal gem, each located at a different site, each to be viewed from a different position: all taken together yield that amazing entity called genius. The first task is then to occupy these different positions and illuminate our subject from those angles.

A significant conclusion follows from this independence of characteristic features. It appears that they can and do occur in all possible combinations. They may all be present in one individual, a few may be missing, or only a few may be in evidence. There can be little doubt that the greatest minds are precisely those that unite in themselves all the salient characteristics. A painter or writer of lesser order is one who has two or three characteristic features

missing. Finally, a minor artist or scientist is one who is endowed with only one or two of the necessary attributes of a genius.

This situation contributes not a little to the confusion with regard to the concept of genius. The word is used in a variety of senses, beginning with one quite restricted, passing through a gamut of different widths, until at the other extreme the sense is as wide as it is shallow. This matter is in reality one of nomenclature, and as such of relatively minor importance, since names are arbitrary. What I am going to state in this respect is to a certain degree also arbitrary.

In order to keep matters clear and free of confusion, let us restrict the designation genius to those individuals that unite in themselves all or nearly all of the essential characteristics to be specified in the following discussion. Here, then, we have a practical definition of the term, genius. Those who exhibit only a relatively few characteristics should not be designated as such; let's refer to them as genial persons, genial in the sense: related to genius.

Let me digress briefly in reference to this matter of names. While essentially of little significance, we are apt by widening the usage of a word to pull down certain concepts from their originally high level to a lower one, a procedure which may be called prostitution of concepts. A good example is the word philosophy. The original meaning is an exalted one, signifying a complex system of thoughts on the ultimate truths in science and human values. Against this, one often hears the word applied in connexions like 'the philosophy of supplementing food with vitamins' and others in the same vein. Another example is the use of the word friend, originally of a restricted, warm and intimate meaning, now used to refer to any casual acquaintance. The word genius has suffered the same fate. Originally used to describe great minds of supreme creative power, it is often applied, and by no means facetiously, to designate a child who is particularly good at spelling. I don't think such diluted usage is proper; not only does it rob certain expressions of their true meaning, but it actually degrades the underlying elevated concept of lofty character, tacitly intimat-

ing that the concept – in this case the true genius – is not at all as rare and elevated as believed.

Returning to our differentiation between genius and genial man, the two classes are not strictly demarcated. By no means! They merely form the two endpoints of a series; the transition between them is continuous and even vague. Many in the middle of the series possess a limited number of essential genial characteristics; to which class we count them is irrelevant and partly a matter of personal taste.

Let me illustrate this by an example. Nobody will doubt the genius of Keats: even if one knows little of his personality, his writings have the power of immediate fascination on any reader susceptible to poetry. The reaction to Chaucer is not as overwhelming: one reads him quietly, partly with pleasure, partly with indifference. He belongs to the transition group; whether he is called a genius or not is a matter of personal opinion; in our further discourse we shall have opportunity to quote more of his caliber, if for no other reason than because of the scarcity of the truly great. Going one step further, we might mention John Donne whose poems strike the reader as genial, noteworthy and interesting but not more. He is an example of the genial man with a fine achievement, but he could not be called a genius.

Now a few words about the second aspect, the work of genius. In my last examples it was not possible to avoid that matter: in judging the three poets, their work was used as a criterion. In the same manner as we describe the features of the man, we shall try to establish the salient features of a great work, the characteristics that distinguish it from the thousands of ephemeral products and accomplishments having the life of a meteor. We will find this second task exacting.

Theoretically, there is a correlation between the man of genius and his work, one conditions the other in a necessary and sufficient manner. In order that a work of genius be produced, it is necessary and sufficient that the creator be a genius. Similarly, a man of genius is bound to produce a great work. Since the two, man and work, will be described independently, one after the other, we cannot expect the causal correlation to become evident throughout.

Whatever relation we might find will be empirical, and can be stated when we are through with our discussion. The existence of such a relation, whether theoretical or empirical, is of help: having once established the criteria of a great man and a great work, we shall be able from a knowledge of the greatness of a man to conclude to the greatness of his work, and vice versa.

Such procedure might prove of value. Of men in the past, we know the work with all the clarity that a perspective of a long lapse of time permits, free of all novelty, rivalry and bias. Their personality may or may not be known in all detail. We know very little of Praxiteles. The authorship of Shakespeare has often been questioned because of his reported lack of education. The work in these cases settles the question of their genius.

Quite different is the situation with contemporary men. The personalities of Picasso, Prokofieff or James Joyce are known in all detail. The work, although impressive, is partly enigmatic. As it will emerge from subsequent chapters, the absolute value of present day works of art or science cannot be objectively assessed because of lack of necessary perspective in time. It is possible to make guesses, but mistakes are often made. In these instances, then, it is of help that conclusions may be drawn from the man to the work. If the former unites all features of a genius, the possibility of the work having the stamp of the truly great is appreciable. After all, it is good to look with confidence to those and only those of our contemporaries who will be among the great three hundred years hence.

2 LIMITS OF THE CONCEPT OF GENIUS

Having thus restricted the concept of genius to men of only the highest qualification and thus of rarest occurrence, it is now necessary, before proceeding further, to apply still another restriction. This refers to the fields in which men are active.

The generally accepted view is that geniuses may arise in every imaginable field. This view needs correction. In this chapter certain statements will be made, yet without an attempt to prove them thoroughly at this juncture. This would not be possible because much of the material needed for a proof will be gradually forthcoming in the course of this treatise. It will be sufficient here to briefly outline our ideas.

Sometimes one hears the phrase, genius of action. By this is meant a man whose work does not consist of a concrete record such as a picture or a philosophical system laid down in the form of a book, but rather of an action or a series of actions the value of which is measured by their consequences. Into this group fall first of all statesmen, diplomats and politicians, secondly the military leaders of renown. We believe that great men in these groups cannot in the strict sense of the term, as defined earlier, be called geniuses. As may be recalled, we said that a genius must unite all the characteristics of a great man, characteristics that shall be developed, one by one, in the following pages. In a statesman or politician some of these will be found missing — later on, we shall be led to this conclusion quite automatically. Another group of a 'genius of action' are the great financiers, the multimillionaires, the founders of large factories and corporations. According to general usage, many of these men are geniuses. Yet the same objection holds true for these as well. We shall see as we proceed that these men, however great in certain limited aspects, lack some of the essential features of the truly great. In fairness, we are forced to

conclude that, as a rule, they are not the equals of Shakespeare, Michelangelo or Newton.

It is to be understood that exceptions are always possible. Even a statesman can be a genius: Marcus Aurelius, although an emperor, was also a philosopher. There are also borderline cases, such as Napoleon, and, since this is not a mathematical discipline, the decision in such cases may be left to personal inclination.

I realize that such severe restrictions will meet with objection from some, but we must be consequent, if some clarity is to be brought into the difficult problem on hand, which is, after all, our purpose.

Having gone so far, what fields are then left in which we can with confidence look after our elusive subjects? These are the domains in which concrete creative activity is possible, an activity that results in products to be seen, heard or read. There are three such fields, those of the arts, the sciences, and the philosophical systems, including religions. Here we encounter some further difficulties. The noted Austrian writer, Otto Weininger, who, because not understood by his contemporaries, committed suicide at an early age, went so far as to maintain that there can be no genius among scientists. A scientist, even the greatest, according to him, was a highly talented specialist, a clever explorer of strictly demarcated problems, who, however, could never reach the lofty heights where dwell the truly great minds. Only great artists and philosophers could claim a place above the level of the average human being.

Following my personal feeling, let us say, intuition, I cannot go along with this thesis, although there is one particular point of reasoning that makes us wonder whether this restricted usage isn't justified. A scientific discovery is always in the air before it is made, it is conditioned by all the research that has gone before. The actual making of the discovery is a necessity. It is a matter of chance, as to which scientist within a period of ten or twenty years hits upon it. If not by one, it is bound to be made by another. If Einstein had not stated the equivalence of mass and energy, another great theoretical mind would have enounced it not too much later. The progress of science might be held up by twenty

years or so, but not longer. The same holds true for experimental science: Faraday's discovery of electromagnetic induction or Rutherford's discovery of atomic transmutation were bound to come at those particular periods. We have definitive proofs that this is so by many examples of dual discoveries: those made by two persons within a close interval of time. Disinfection was introduced almost simultaneously by Semmelweis and Lister. X-rays were first observed by Crookes, although he did not recognize them as such; shortly later Roentgen made the actual discovery. There are many more such examples. They show that the great scientist, by virtue of his instinct, follows the right track, and, with a little luck, hits upon matters, whether theoretical or calling for observation, that but for a thin layer of soil have been unearthed by his predecessors. Realizing this situation, one might wonder whether the great scientist is truly the exceptional mind associated with our concept of genius.

Contrast with this the work of a great artist or philosopher. Such work is also time-conditioned, no doubt, yet it is to a large extent the result of creative imagination. Unlike a scientific statement it is not a matter of true or wrong. It concerns matters of beauty and human values. No two poems can be alike, whereas there can be only one correct answer to a scientific problem. Thus, if a poet does not write a particular poem, it will never be written by anyone else. In this sense only the artist is a creator. If Dante had not existed, we would never have had the *Divina Commedia.*

There is yet another difference between artists and scientists which is pertinent in this connection. With very few exceptions, a work of art is the result of only one man. If the artistic products of any one man, Paul Klee, for instance, are considered masterpieces, then there is no logical error in calling their creator a genius. Not so with a scientific achievement, particularly in our own times. At earlier periods they, too, were mostly the output of one man only, but not today, when the complexity of the problems and the magnitude of the apparatus involved often necessitate the cooperation of two or more people in one project. A significant discovery is made. Who, then, is the genius whom we may thank for the achievement? Should we call both or, as the case may be, all

three geniuses? In view of the fact that the species is rare, the presence of several of them at the same time and the same place seems rather unlikely. If only one is a true genius, it is often difficult to decide which of them is the really great. Yet it is an undeniable fact that many significant discoveries these days are effected by teams. As a result, the Nobel prize in the field of sciences is occasionally split in recent years, although this is due also to simultaneous, independent work.

Instances of such team discoveries are rather numerous. The discovery a few years ago of a physical principle, the non-conservation of parity, a principle of far-reaching significance, was the result of cooperation among Lee, Yang and Wu, besides other coworkers. The discovery of a new and fundamental radiation, generated by fast particles in refractive media, was the result of the work of four men: Vavilov, Cerenkov, Tamm and Frank. When controlled nuclear fusion is achieved some day, the number of significant contributors will in all probability be still greater.

Where is the truth in the controversy stated? I have the impression that, in spite of these fundamental differences between artists and scientists, an exclusion of the latter from a consideration of the phenomenon genius would be erroneous. This, so far, is only an assumption; the proof will be supplied in the following chapters. When the chief features of a genius are established, we will find that they apply without constraint to a great scientist.

The foregoing remarks were meant as part of a basic introduction; they will prove of help in the discussions to follow.

II

ESSENTIAL CHARACTERISTICS OF THE GENIUS

3 QUASI-EXTERNAL COMPULSION

In Chapter I it was suggested that we begin by a characterization of the man of genius. I should like to start with a feature that seems to be perhaps the most significant of all. This feature is intimately connected with the mystic and awe-inspiring nature of a genius. Unfortunately I have known very few only and by no means intimately, so we can talk mainly of our reaction when reading their biographies and when we contemplate their creations. Needless to say, this contemplation must be deep, not simply an interested, let alone casual, listening to a symphony or a perusal of a scientific paper which we happen to need for a study of our own. Not too many people take the time and trouble, or, to be more truthful, have the necessary capacity to seriously contemplate such work. Those who do cannot fail to feel an infinite respect and admiration for the men, a respect which sometimes makes us shudder, as if they were supernatural beings. There is something in the nature of a genius which can only be discussed in terms bordering on the mystic. Such thinking, I well know, is not received favorably in our enlightened century (in what century were people not convinced that theirs is an enlightened one?); I am, therefore, running the risk of being considered old-fashioned. Yet — think a moment! Is it possible to ponder the work of Martin Luther, the radical interpreter of Christian religion, with a sober eye, as if he had been just a gifted and sharp-eyed translator like so many others? One cannot help feeling that there is something demoniacal in his whole being. Thomas Mann in his *Doctor Faustus* brought out admirably this demoniac character of genius, personified by the composer Adrian Leverkühn. This peculiar characteristic becomes so striking in certain instances that we are led to imagine those men were in pact with the devil.

Please note that I am materialist enough to know that there are

no devils. I am using this terminology quasi metaphorically in lieu of a more scientific one. At a later time, when we know more of the biochemistry of the brain, we shall be able to dispense altogether with such concepts, today they are useful in expressing our vague notions on psychological phenomena. Thus the phrase, a genius seems to be obsessed by the devil, must be taken pictorially to convey the prime feature of his nature.

It appears, then, that a genius does not act entirely on his own, rather by virtue of a quasi-external force. He is under compulsion to act and create, his action and creation does not seem to be the result of a deliberate motivation as is the case with other mortals. One might say that the notion of a free will, which may be applied, whether justly or not, to the rest of mankind, is inapplicable to them. This may sound paradoxical, since it seems to put them a peg lower than the average man, but if you keep in mind the pictorial nature of the thesis, the paradox will evaporate.

A moment ago I spoke of Martin Luther. His words before the Diet at Worms, 'I can do no otherwise,' is an illustration of the compulsion I am talking about. An ordinary man, called to account for his deed, will try to justify and motivate it, or else will compromise and say he did not mean to offend, in the extreme case he will retract entirely and withdraw his statements, apologize, or even go as far as to hint that he must have been temporarily out of his mind. The genius, in contrast, does not heed the uproar he caused and the public condemnation. Perhaps he does mind it, perhaps he hates to be outlawed, but he is not free to act according to his liking or purely human judgment. He does not seem to be human to the average observer. And this observation is correct. The genius is a medium through whom the external force previously alluded to finds its mode of expression; no wonder that an observer, used to ordinary human logic and sentiments, sees in the man something abnormal, inhuman.

I don't know whether I express myself clearly, but this compulsory character seems to me the most pertinent of all features of genius. Having described it from the standpoint of an observer, let me say a few words about the way the man himself might feel about it. Here obviously I have to make full use of my imagination.

My moderately vivid imagination finds some support in my medical experience. I am thinking of a wounded person, a foreign body lodging under his epidermis. A complicated series of processes begins, depending on whether the body carries microbes or is sterile. In either instance the process is highly irritative and painful to the victim. He has the strong feeling that there is some extraneous body in his own which by right does not belong there, and which, therefore, must come out. He is in pain, and does everything within his power to promote the separation. Finally, the feat is accomplished, the body is out.

Perhaps a better analogy is a woman in the pangs of childbirth, since in this case the fetus, although anatomically a foreign body, is not quite as foreign as a bullet or a sliver. Modern women usually don't know too much about this painful procedure, but I vividly remember from my experiences as a medical student, what an ordeal it was to the prospective mother. A counterpart to this picture is the irritated, excited and illhumored man who, for lack of a cooperating female companion, is not freed of his natural, physiological surplus, and as a result, suffers substanial mental and bodily discomfort.

A genius, working on one of his creations, must experience similar agonies. He is a sufferer, primarily mentally, but also physically. The work, an extraneous body, labors in him and will out. He is perfectly aware that he must produce it, or become sick or mentally deranged. His suffering is not merely pictorial, but very real. He has, no doubt, his particular pleasure during the process of birth, which, however, does not detract from his pains; the two contrary feelings exist simultaneously. This duality is characteristic: he feels elated to be able to produce a work that causes him so much pain. It must be, in fact, very similar to the feelings a woman has during childbirth. The genius at moments wanders about or tosses around trying to formulate his ideas that boil in his mind, trying to think of the right forms and colors by means of which to express his visions, trying to extract from sheer nothing the sounds and melodies that seem the most appropriate to give vent to his sacred and innermost emotions. Particularly this last effort must be the most superhuman of all because the melody, in

contrast to the idea and vision, comes literally from nowhere, out of empty space, and is clearly the most extraneous, the least human of all creations.

Lest I might be accused of being fantastic, I shall endeaver to give a few examples. Anton Bruckner, so we are told, worked on his last, the ninth symphony for about ten years, the last ones of his life. This work is his masterpiece, although without a finale, and therefore performed mostly with his *Te Deum* as the closing movement. He must have had clear visions of what he wanted to express in this last symphony, but the distance between his power and the work which lay concealed in darkness was too great for him to cope with. Again and again he made an effort — in vain, after ten years he died without being able to finish it. Any second class composer would have finished it, just for sake of completion. With him it was different, completion of the symphony was not within his control, he either could take hold of it, or, if not, it had to remain unfinished.

We read about Beethoven, erring about in the woods, gesticulating and muttering to himself as if out of his mind. It was his fight with a teasing demon holding his creation as yet unborn: showing it to him one minute and tearing it away in the next. It was a tough fight: he had to wave his arms and eject incomprehensible sounds.

Einstein wanted to build a system comprising electromagnetism and gravitation on a unified basis. He was convinced that such a system existed, and tried very hard to reach it. His struggle to grasp what he saw as a vision lasted from 1905 until his death fifty years later. Not unlike Bruckner, he achieved partial victory over the unknown, he could not completely finish it. The external force using him as a medium was not strong enough to effect a complete breakthrough. Nobody but himself knew the suffering that the urge of the force using his frail body for an ingress caused him.

Finally, let us look at Goethe and his *Faust*. The first part was written when he was forty. He knew that he had more to say; what it was, remained dark for another forty years. He finished it in his eighty-second year, when his mind was mature enough for the treasure that had lain hidden, fermenting, to come to life.

4 UNSELFISHNESS

In the preceding chapter the impersonal element in a genius was stressed. At present, the existence of such a quasi-external compulsion is apparent on the basis of pure observation only; it is to be hoped that in the future it will be analyzed by physical and chemical methods, and reduced to specific compounds present in the brain.

If a genius acts and creates by virtual compulsion, it follows that he must be unselfish. The word inhuman was used, and when I say, unselfish, the inhuman behavior of the genius is emphasized in a striking manner. No person can be blamed for taking care of his best personal interests; even the proverb says, look after yourself and God will protect you. A person who disregards this elementary human right must appear abnormal or at least highly exceptional. This exceptional feature appears in the true genius to a pronounced degree. It cannot be otherwise: his purely personal well-being must be driven into the background if his guiding motive is an external one. It would be an exaggeration to maintain that everything a genius does is against his own interest. He must live in order to create, so he must take care of his livelihood. But often his actions are naive, childish, or even diametrically opposed to his interests.

More precisely, he is not bent on attaining either wealth or power, the two most coveted treasures in human life. There may be exceptions, of course. A genius is proverbially associated with a scarcity of worldly goods. This, however, is not the main point, neither is it always the case. If a genius is appreciated in his lifetime, he might obtain sufficient reward for his work, making him a reasonably well-to-do man. Leonardo da Vinci actually loved a luxurious life. Or he might be the son of a wealthy father. The salient point is that he does not covet wealth; if he happens to have

some, he often squanders it, and scarcely ever makes use of it in a practical, businesslike manner. His demands are modest, and he usually does not need the money that came to him without specific effort. Horace was by no means poor, from Maecenas he received a house with orchards in the country, but he led a simple life, as is reflected in his poems, praising simplicity and contentment above other worldly goods.

More striking is his indifference toward power, which for many has an irresistible attraction. A genius will not strive for a position giving him power over others. Accidental instances providing a genius with power are far more exceptional than similar instances in the field of wealth.

The two aims, wealth and power, are similar in that they are both egoistic. As said before, the genius is primarily and fundamentally unselfish. The force that drives him uses him as a means to bestow upon mankind a treasure which up to then it was lacking. As pointed out before, the genius in a sense is a victim. He could not be called that if the aims toward which the force is driving were in his own interest. The aim is to benefit mankind as a whole, not the particular man through whom the force is acting. Whatever our detailed conception of this force may be, the fundamental fact remains valid in any case: the true genius, without his deliberate intention, is a benefactor of mankind, acting free of egoistic motives.

Emerson, because of his outspokenness and his condemnation of the ways of the clergy in his time, suffered many adversities. For objecting to the ritual of the Communion, he was forced to resign his position as pastor. It would have been easy for him to give in, and most average people would have done so in order not to lose their positions. Yet such consideration was of secondary importance to him because personal benefit was not the purpose of his life: he wanted to serve mankind, a service which he could fulfill only by adhering to those principles which his conscientious thinking dictated. Recalling the statement made in Chapter 1, it may be added that to be consequent and unrelenting, or even a martyr, is not in itself a sufficient criterion for a man to be great. There are many more conditions to be met.

Mozart was admired by some of his contemporaries, but he was by no means popular. Had he been popular, he would not be admired today. People often reproached him for the subtlety and high level of his music, particularly his operas, which made them incomprehensible to the average listener of his time. The reproaches meant nothing to him, notwithstanding he was nearly always in need of money which he spent quite carelessly.

A further striking instance is the story of Jesus. The external force in his case may historically be identified with the prophecy laid down in the Old Testament. In the beginning of his teaching he was not conscious of this; later it occurred to him that perhaps it was he who was meant by the prophet. In order to fulfill the words, he was to be sacrificed for his belief and teaching. It was not enough for him to be poor, he was compelled to give his life. Paradoxically as it sounds, this was by no means easy. He confided his special mission to his pupils with the strict demand to keep it secret. Knowing that a betrayal of the secret to the authorities would mean certain condemnation to death, he needed one to take care of the sombre task, and he realized that there might be one among the pupils who would not heed his demand. Jesus's act is one of the most consequently executed by a great mind in order to fulfill his mission, in utter disregard of his life.

No need to quote further instances to prove the point; there are many, and anyone can think of some within the circle of his own knowledge. There is, instead, another matter which deserves mention. In Chapter 2 the question of the limits of our present subject was raised. It was suggested that statesmen, military leaders, and financiers cannot be classed among the great we have in mind. The proof of this statement was left open. It now appears that such a proof is furnished by a consequent application of the principle just evolved. It is not the only proof, others will be forthcoming in due course. Some readers might find it unnecessary to spend much time on this matter, others again will be far from convinced by what I am going to say.

We have said that a genius is always motivated and guided by a compulsion which drives him to the accomplishment of matters to the benefit of mankind as a whole. A financier or a statesman

might think that what he is doing is also the result of a compulsion; he might feel that building up a large estate is a necessity with him, that he is unable to do otherwise; that setting himself up at the top of a nation as a dictator is in compliance with a voice from above. It would be hard to argue against such feelings. It is relatively easy, however, to show that the motive of their actions is always egoistic and practically never to the benefit of mankind, although fragmentary and often questionable benefits can be found in certain cases. When a ruler of a nation leads it into war, it is always, without exception, for egoistic reasons, never for the benefit of mankind. If he imagines, it is for the good of his nation, he is mostly wrong because his own nation undergoes suffering similar to those of the enemy. Even if the war ends with advantages for his own country, a benefit to mankind is still not in evidence, since one country cannot be identified with mankind as a whole. If such a ruler, after successful military operations, at the pinnacle of his wealth and power, supports arts and sciences, he might be called a man of good judgement, or at best, an indirect benefactor of mankind. But his beneficient activity has its roots in his personal egoism and vanity, the benefits to mankind are secondary and, as it were, incidental. In any case, it is not possible to call his military and diplomatic activities those of a man of genius, only because as a result of those activities he decided to financially support artists and scientists. This support has not only no organic connection with his preceding selfish, unholy and bloody action, on the contrary, it is mostly an act of despair on his part, calculated to justify his misdeeds before the country and his own conscience. Think of Lorenzo Medici: by no stress of logic and imagination can the powerful politician and successful army leader be considered equal to or even resembling the great artists whom he thought wise to support.

5 DESIRE FOR SURVIVAL

We now begin to see what a genius is like. We have seen that he creates under a constraint, and that he does so unselfishly, for the benefit of mankind. This is correct, yet he now appears in a strange light, stripped, so-to-speak, of the last vestige of his humanity. In reality he cannot be quite so inhuman. Besides the external constraint there is another spring that keeps him going, an urge that is not outside, but very much inside his venerable body, one that is present in all of us, only in an incomparably lower level. A fantastic transformation, or better transfiguration takes place with this widely encountered urge when entering the frame of a great man. And it is this transfigured urge that drives him on to create the works we marvel at.

I trust I have made the reader sufficiently curious to know what this urge is. It is the second of the two principal drives in the realm of animals: the drives to eat and to love, the drives to maintain the life of the individual and of the species. Each of us dreads death, and realize with horror that no matter how much we eat it won't suffice to carry us into eternity. For this fear of individual death we find some compensation in the life of our offspring when we are gone. At least our children and grandchildren will continue if we ourselves are not vouchsafed eternal life. This is the spiritual reason for our wanting children. Nature, of course, is shrewd. It knows that it cannot very well rely on spiritual reasons. Animals supposedly do not have sense, and in humans it is sometimes suppressed. So nature instituted sexual desire to take care of perpetuity. Powerful as the desire is, it does not detract from the significance of its spiritual counterpart. You find it in the poor and the rich, in the simpleton and the sophisticated. They want children, the more there are, the better; they admire and pamper them; they hope for their becoming great, prosperous, everything they themselves

had been striving for in vain. We might call this general human urge craving for endurance.

This elementary desire, found everywhere, exists also among the great called genius, although in them it is not as pronounced as with others. Desire to last has taken another form with them: it has become desire to last through their creations. They feel that their work will not die, that it might survive them by hundreds if not thousands of years, and they realize that in this manner they will achieve a particular, spiritual form of immortality. This feeling is strong with them, and is one of the driving forces for their creative activity.

The rest of us can understand this feeling not only by our desire to have our family perpetrated, but also from other interests as well. There is one who builds a home, made of stone, in order that is shall not crumble so soon, but survive a couple of hundred years as a document of his own life and activity on earth. Another assembles a collection of precious books, china or weapons so that it may go down as a family treasure to succeeding generations who would remember him as the founder of the collection. There are many such instances, some worthy, others naive, bordering on the ridiculous; they show the same desire to cheat death in some way or other. All this is transformed to a high level in the great who like Kant builds a philosophical system, or like Balzac writes monumental novels.

This desire is not only a construed hypothesis in order to explain the phenomenal work we see as a result of their toil; it is a very realistic feeling working away in them and inspiring them, firing them on to continual, arduous efforts. It is a true mate of the quasi-external force; the two, one seemingly from outside, the other from within, act in unison. Baudelaire prayed to God to enable him to write a few beautiful verses, only to prove that he was better than the rest of humanity. This is another form of his desire for immortal life in his verses, seeing that other people were hopelessly forgotten a few decades after their death. It is a gnawing feeling in the heart of the genius, at the same time one of elation when he feels that he was able to achieve at least part of his soaring aspirations.

There is an intimate connection between this desire and his unselfishness. The genius more or less realizes that his life is not that of the average man, that he is often underrated if not entirely overlooked by others, and that his compensations in life are in no proportion to his achievements. He places his hopes in the future which might recognize his work. I said, might, because he can, of course, never be sure of this. It depends on the degree of his self-confidence and on the certitude of his convictions. Uncertainty is one of the tragedies that often accompany him during his lifetime. At times he realizes strongly that he is an outsider among the crowd that happily and carelessly enjoys the daily pleasures of life. When this realization becomes most intense, he dreams of a future justice, when he, although not any longer among the living, would be recognized. Future generations would pay him the tribute that was denied him by the present.

One wonders about the absurdity of this desire when looked upon realistically. Beethoven, although esteemed by the more appreciative in his lifetime, lived in modest circumstances; his life was plain, in fact, somber. The desire I am talking about must have been strong in his mind. Yet what comfort could it be to him that two hundred years later his music would be played by every orchestra and every great artist? Today, when his desire has gone into fulfillment, he knows nothing about it. And when he lived, he knew that he would know nothing about it when the time came. This desire for immortality through creation is hard to understand in average terms, but since it is basically the same as the desire of the average man to live on in his children, we can understand it by intuition rather than by reasoning.

One might be led to explain this desire of the genius by saying that his basic motive is nothing but personal vanity. Indeed, such an explanation is not entirely wrong. The genius, in spite of his extraordinary nature, is human in many ways. This point was mentioned in the preceding chapter, and will be taken up later. Vanity is one of the most basic human features, and it would be hypocritical to deny it in the great. We have many proofs from their biographies that some were, in fact, extremely vain – to mention but one striking example, Voltaire – although it is often

stated that the very greatest are void of this frailty. This point is problematic; a human being can scarcely be imagined entirely without that weakness. What is decisive is the importance vanity occupies in the feelings and actions of an individual. It is certain that only with little people does vanity play an important role, and that in the mentality of the truly great it is present to a minor degree or in the subconscious only. I repeat that there are exceptions: the vanity of the famous chemist Nernst bordered on the humorous.

While vanity may be one of the factors causing desire of the genius for endurance, it would be false to regard it as essential. To summarize, we are faced with the general desire for immortality in all humans, transposed to a spiritual level, providing a vaguely enjoyed compensation for the worldly goods and pleasures the genius is often denied.

6 INVENTION

We have heard of the mainsprings of creative work in a genius, motives of a quasi-external and inner nature. It is time now to talk about the requisite features a man must possess in order to be able to do creative work. It is obviously not enough to hear the call, you must be able to follow it. We shall have opportunity later to discuss those pathetic cases in which the call is strong, yet the ability to obey is sadly lacking. There is a large variety of such individuals, more than is commonly believed.

Let us then turn our attention to the necessary qualifications of the man of genius. I should like to begin with one that certainly deserves to be at the top, namely inventiveness. It is not only the first requirement, it is also obvious and elementary to an extent that makes a long discussion unnecessary.

Invention, simply, means that the man, before he can create, must have an idea of what he wants to do. The invention must contain both the general subject to be created and a detailed picture concerning execution. An inventor, for instance, must have a notion that he wants to construct a machine that permits a flight between planets; at the same time he must have a clear conception of the essential physical means he wants to utilize for the purpose. As you can see, the requirement of inventiveness is extremely severe. Vague ideas cannot qualify, they must be sound and substantial. What is more, they must be novel. To be sure, not all ideas in the field of art and science are entirely new; that would hardly be possible. Yet novelty in some respect at least is essential.

Wherefrom does our man obtain the idea? This question cannot be answered; if it could, if the source were obvious, if there were a known way of conceiving new ideas, there would be no need for geniuses. Maybe some day the discovery will be made; that would be, indeed, a revolutionary discovery. From that day

on genius, as we know it today, would cease to exist; there would be instead a new breed, fulfilling those achievements that today are done by a very few. This subject will form the topic of a later chapter. For the moment we simply accept invention as a fact. By calling it intuition, nothing, of course, is gained, although the word colorfully implies its puzzling, spontaneous character.

Invention, not in the sense of inventiveness, rather the act of invention, is really the crux of the genius problem. While my present subject is inventiveness, as one of the chief characteristics of genius, let me interpose here a few remarks – they will be scarcely more than remarks – about the act of invention. Creation being the phenomenon that identifies a man as a genius, the creative act is obviously the most puzzling matter in this entire discussion of ours.

There is not much information available that could be used in the solution of the puzzle. Certainly, autobiographies of great men are of value, but of limited value. For, curious as it may sound, the genius himself does not know the true answer, he is not in a position to give a clear description of the process. This is so with all matters relating to the activities of our brain. An examination of the medium that does the examining is nearly an impossibility. When we examine something, that something should be an object outside of our self, then we can handle it, turn it over, look at it from all sides, experiment with it. At any rate, this quality of being outside is a considerable help in our studies, as evidenced by the actual development of physics and chemistry in contrast to psychology and social sciences of which little exact knowledge has been accumulated. The genius himself is in no better position. He pours out treasures, but how he does it, he himself does not know.

In trying to obtain an insight, the study of the way the average man hits upon an idea provides, to a certain extent at least, an analogue. This is of help: by restricting ourselves to geniuses in this matter, our chances of successful analysis would be even less.

Invention in the genius starts out in the conscious mind, in many instances at least; certainly with scientists, also with artists. There is some notion in the mind concerning a project and its subject, sometimes clear, in the beginning often vague. Once the

project has taken shape, it does not leave its victim; the external force mentioned earlier tenaciously and determinedly holds its sway. However, other projects and work already in full swing occupy a substantial part of the man's time and energy, and the vague and new project remains in abeyance. Yet, often the man will find, not without surprise, that the unborn project is lurking somewhere in the back of his mind, whether he wants it to or not. In some way it competes with those works that are being carried out, and quite often successfully. This phase of the phenomenon is pictured with enlightening clarity in the introductory dedication to *Faust*.

The power of the floating project becomes more active when the genius rests. His mind, not in the working state, is now easier invaded by the force. This condition, commonly called daydreaming, is fruitful for the act of creation because the brain is not occupied with other matters and is free to roam. Imagination comes into its full right. E.T.A. Hoffmann experienced his best inventive moments in dreamy conversations with his friend, the actor Devrient, when lightly intoxicated in the tavern of Lutter and Wegner in Berlin. And if you are looking for a pictorial presentation of this act of creation in a daydreaming poet, I could not recommend anything better than Mallarmé's portrait painted by Manet.

How far does this condition go, how far removed can it be from the state of conscious wakefulness? It may actually continue in the true dream of sleep. Who can tell? Imagination is certainly freest and most unhampered in that state. The close connection between dreaming and poetic invention is depicted in Strindberg's drama, *A Play of Dreams*, whose plot, incoherent and fanciful, yet highly meaningful, turns out to be the dream of a poet. One might think that such a preparatory stage during actual dreaming is useless, since it is bound to be lost; this, however, particularly in a genius of great impressibility, is not necessarily the case: an idea dreamt might leave a lasting track in the brain.

The process as pictured may also be formulated by using a more scientific term, that of the subconscious, not as if the use of the concept would carry a great deal of factual information. The concept has been utilized in experimental psychology since Freud,

yielding, however, relatively few positive results. Thus, it is probably correct to say that the act of creation takes place essentially in the subconscious mind, both in artists and scientists. This act needs a high degree of tranquillity and detachment, the conscious mind with all its turbulence does not provide that necessary condition. The idea, not yet born and existing only in fragments, trying to develop and assume more concrete shape, flees the unpropitious surroundings of the conscious and takes refuge in the quiet and undisturbed region of the subconscious. There are certainly cases in which the idea does not even start in the conscious mind, but dwells from the very beginning in the subconscious regions.

When the search in the subconscious leads to tangible results, whether a specific scientific idea, a musical motif, or the plan for a painting, whether it be a compact and concise product, or a complex and elaborate scheme, it breaks into the open, out of darkness, sometimes like a bolt of lightning, unexpectedly, often under circumstances that bear no direct relation to the problem on hand. The birth occurs when the man is not thinking about it, perhaps during a certain prosaic, very human pursuit.

Leaving this fragmentary attempt of an explanation of the creative act, let us return to inventiveness as a prime requirement of genius. We might say a few words about the way inventiveness works in the minds of the man of science and the man of art. The difference between the two fields was expounded in Chapter 2; it is quite significant, and inventiveness is accordingly different too.

The scientist explores the laws of nature, whether those of the physical or social world. He does not create the laws, he discovers them. This is significant because it shows that the scientist does not actually invent; in fact, a scientist who invents a law of physics is a bad one; his duty is not inventing that law but unearthing it. In that sense it may sound surprising to talk of invention in connection with scientific creations, which, as I said just now, are, strictly speaking, no creations. When we use the word invention in this connection, it is used in a slightly different sense: it means, inventing a way to discover a law of nature. It means, inventing an experimental approach which might clarify the situation, or inventing a hypothesis which, with the proper mathematical ap-

paratus, might lead the way to new experiments or correlate findings in different domains. This is what is meant by scientific inventiveness.

This particular subject forms the theme of many studies, and we do not need to go into it any deeper. I will only mention that the most powerful tool that assists a scientist in his invention is the use of analogies. From his knowledge of existing laws in neighboring fields or sometimes in fields that are rather remote he often concludes that analogous conditions might exist in the field under investigation. This lucky exploitation of possible analogies is one of the most frequent forms of scientific inventions. A wide knowledge of a variety of fields, and a vivid, yet solid imagination are the prerequisite of a scientific genius.

In this connection the question arises: what about inventors in the narrower sense of the word? are they not specially imbued with the ability of inventiveness? If the latter is the prime criterion of a man of genius, are inventors not of a higher rank than scientists who only discover laws preexistent in nature?

One cannot fail to sense that there must be a flaw in the logic above. As explained in Chapter 4, unselfishness combined with a nearly unworldly outlook on life is a chief characteristic of the genius. The presence of its opposite, namely a strongly business-like attitude is rarely found among the greatest. The majority of inventors, as we know from biographies, are clever engineers or chemists, interested in having their inventions patented and financially exploited. Not all are successful in that venture; when not, they are badly disappointed because their main interest lies in the monetary reward. Such men could scarcely claim close relationship with the group under discussion.

It appears we have swung too much to the other extreme. Don't let us be dogmatic. Each individual case must be judged on its own merit. The majority of inventors lies outside the scope of our consideration, but there are exceptions. The presence and absence of all characteristics must be weighed against each other. Even a strong leaning toward the pecuniary values of life can be tolerated and excused in a man who has all the other characteristics of an elevated mind. Nobody would seriously doubt the presence of true genius

in a man like Edison. The highest degree of inventiveness is imperative for these men because the devices they are occupied with do not exist in nature and are strictly the child of their brain.

In the arts, invention in the form of what is known as inspiration is a *sine qua non*. Its significance is pictured by the concept of the Muse of the classical artists, notably poets who invoked her help for inspiration. It is interesting to compare in this respect the three main divisions of art.

For painters and sculptors invention is less imperative than for others. Their subjects lie open to view for anybody; their task is to choose a suitable landscape or person for a painting. This remark holds chiefly for earlier periods of art; as we proceed to later ones, the less valid does it become. The Dutch genre painters, for instance, instilled atmosphere into their interiors, requiring a great deal of inventiveness. The French impressionists give more than landscapes or still lives, their own feelings and thoughts are included, again implying a good deal of invention. This tendency becomes most pronounced in the moderns. Comparing Titian's *Venus and the Lute Player* with Picasso's *Aubade*, two similar subjects, one can say, irrespective of one's probable liking for the first and conceivable indifference to the other, that the latter required more mental invention than the first. Even more striking is the role of invention in Klee's drawings, such as the *Miraculous Landing*, or the *Road from Toadspawn to China*. Inventive wit or satire is one of the assets of modern art which under circumstances replaces beauty often found missing (see Chapter 29 on humor).

Invention in literature is a more stringent requirement. Subjects of novels and poems do not lie as plainly around as woods and flowers. There are, of course, outside sources from which a writer and a poet can draw his subject when his own invention becomes sluggish. History is a frequent substitute. Ironic as it sounds, the value of famous warriors and heroes who during their lifetime wrought nothing but suffering and destruction upon their people lies in the fact that they provide material for writers and poets of future generations. Another outside source is the whole lore of previous literature. This is no plagiarism. Practically all of Shake-

speare's tragedies and comedies have their source in previous literary work. A lack of invention is amply compensated for by excellence of execution. Finally, there is the entire scope of human life in all its riches, a practically unlimited source for the literary genius. More of this matter will be found in Part V, dealing with the work of genius.

The artist who has no significant outside source is the musician. The value of nature as an inspiration for a composer is problematic, and the use of previous works for transcriptions has a limited range. Those who imitate the spirit of previous composers are epigoni. Thus invention in musicians is the crown of all inventiveness. It truly borders on mystery, notably if compared with other works of art executed by the greatest who, nevertheless, had nature, history and the whole wealth of human life at their disposal. Creation in music is creation in its essence, requiring incomprehensible inspiration. Listening to Chopin or Schumann, we are awed by the limitless wealth of melodies, the very summit of beauty, flown out of a human brain, an aggregate of protein and lipid molecules, not demonstrably different from other men's whose only corresponding ability lies in enjoying it.

7 MASTERY OF CRAFT

We talked of invention. The faculty that must go with invention, without which invention avails nothing, is technique, the mastery of the craft.

What is it we mean by mastery of the craft when talking of an artist? Is it the same as the technique of multiplication, of photography or that of using a typewriter? Is it something that can be put in words and written down as a manual?

It is not like that. To be sure, manuals are written on drawing, and there are textbooks on musical composition. If one studies such books and happens to have no talent or only little for the art, the benefit he derives from the study will be close to nothing. There is a classical book by Leonardo da Vinci, *The Art of Painting*. One should think that a book written by such a master ought to teach a person the art. This is not so. There are similar books on music and other arts, and many are good. They actually give instructions on how to execute certain manipulations, and it cannot be denied that the information can be of value if, and only if, the reader has the necessary natural talent.

While this seems fairly obvious for the arts, it is less so for sciences. There is a tendency nowadays to produce scientists by education. Some believe that it can be done, that young people can be taught sufficient physics and mathematics to make a Faraday or a Gauss of them. This notion stems from a confusion of concepts; good engineers or teachers can be produced in this fashion, but, of course, not a single genius. No, the mastery of the craft cannot be simply taught. Even if this is admitted by the advocates of 'forced scientists,' they maintain that such an educational system would bring to light dormant geniuses that otherwise might have stayed undeveloped. From what we know of the life of geniuses,

a real one cannot stay undeveloped; they break through under the most unfavorable conditions of home and schooling.

Even if a system could be developed that would impart the craft to young men of more than average ability, inventiveness would not go with it. Yet the best mastery is not enough to make a genius if inventiveness, inspiration is lacking. Many musicians mastered the craft, as their compositions show, yet their music is not inspiring because they themselves lacked inspiration. They are professional musicians of the first order, not more. Our principle of multiple characteristics finds an important application in this connection.

An interesting difference among geniuses becomes here evident. There are some who spend considerable time and effort learning their craft, others who acquire it without any effort at all. Most remarkable are the instances in which excellent work is produced at an early age. Sometimes this early work is not particularly original, but it is still amazing as to how and wherefrom the intricate and complicated technique had come into the young man's possession. A brief study of existing masterpieces shows them immediately the technique to be employed. Gauss as a small boy at school used the summation rule of the arithmetical series without ever having learned it. Technique comes to them by way of intuition and direct insight. The manner Siegfried molded his father's sword from its fragments without prior instruction, since his teacher Mime was unaware of the method, is rendered masterfully by Wagner.

Other masters learn and develop their technique not without effort. Bach studied many acknowledged masters of his time before establishing his own technique. Beethoven changed his manner of composition constantly. Balzac whose output was very large improved his writings many times before and even after having sent it to be printed, as a sign that the craft caused him no little trouble. While Heine wrote with extreme ease, he mentions, not without derision, von Platen whose output was small and who worked laboriously on his spiritual offspring.

Heine's mockery was not entirely justified. One might ask which of the two types: the early and easy or the late and hard worker

is the greater master? On first thought, one is inclined to associate real genius with the easy working type. There is some truth in this, since that type offers the greater mystery, is the less human of the two, and offers more activity for the puzzling compulsion we talked about. Yet the correct answer can be given only by an empirical gathering of facts. It will then appear that both types can be found among the great. Which of the two is present in a given case, depends on the personal temperament of the men; the quality of their creation is in no direct relation with their type. While technique comes easily to one, it has to be acquired by another. Some of the greatest labored hard on their technique; this is true, for instance, of Rembrandt and Cézanne.

We have established two types of men: the easy and the hard worker. We can also look at the finished creation, anticipating to a certain extent the work of genius, a field that, according to our program, will be discussed toward the end of this essay. Let us then cast a glimpse upon the work insofar as technical execution is concerned. Haydn's compositions are pearls in this respect, chiseled to the finest detail; Beethoven's works are more crude and monumental, hewn out of rock, so-to-speak. Or in painting, Vermeer is excellent in technical details, while Cézanne aims at the impression of the whole, often disregarding perfection of details. Or in mathematical physics, Planck's treatises are a marvel of perfection, while Heaviside's revolutionary work is often sketchy, intuitive; he presents it with the main purpose in mind, leaving details to his followers. It is most delightful to contemplate these two kinds of interest in the subject: the perfectionist to whom technique forms an essential part of the project, and the impetuous who is carried away by his idea and cares less for technique. As far as I can see, there is no unique correlation between the easy and hard worker on the one hand, and the lesser and greater perfectionist on the other.

A genius not only has to master the craft, he very often promotes it. In fact, what is all the craft if not the accumulated wealth as established by its cultivators? Not all contribute to this particular wealth. Some use their inventiveness to express new thoughts and new beauty in previously established forms. This is

the case with most philosophers: they use standard logical forms to express a system of thoughts which they evolved in years of thinking. A writer, on the other hand, often develops a novel kind of writing. Proust, Thomas Mann and Joyce promoted the technique of novel writing by a considerable step beyond the stage used, for instance, by Dickens. They introduced the contemplative and introspective technique in lieu of the narrative and descriptive method. They added that technique to the existing craft, enriching it by this means.

In science and technology this enriching of the craft has assumed large proportions in the last few decades. In fact, it has become so that a newcomer to the various branches of science scarcely knows how to cope with instrumental methodology which has grown literally too fast for anyone even in a narrow field to master. It will present a special task for any future genius entering a field to intuitively select from among the overwhelming methodological material the portions that will promote his purpose.

When a genius introduces a new craft, a new technique, it is not always he himself who invented it. The invention may originate from somebody else, a lesser light who did not make full use of it; it is left for a greater one to develop its potentialities. This problem will be taken up later when we shall discuss the originality of masterpieces, particularly also in the field of science. At this place I wish to illustrate the matter from the standpoint of craft, and the field of music is well suited for this illustration.

Up to the time of Bach musical compositions were reproduced in acoustically pure intervals, quarts, quints, etc., which had the disadvantage that on a clavichord or an organ, for instance, only one key was pure, the others more or less discordant. In order to overcome this difficulty, Werckmeister, following some earlier Italian attempts, divided the octave into twelve equal intervals, none of which is acoustically pure, but not disharmonious enough to be disturbing or even noticeable by the average listener. By having the clavichord or organ tuned to these new intervals, which form the so-called equal temperament, music could be composed in any key which was not feasible previously. It was then Bach who in his *Well-tempered Clavichord* showed the way in which

music was to be composed in all twenty-four keys; he showed it not only technically but, by means of his imagination, also artistically. It requires a genius to fully utilize a novel craft. Today we are so used to this equal temperament that it is not easy to realize this particular problem of music prior to its introduction.

Another example. Piano composers up to the eighteenth century wrote their music for instruments like the harpsichord and clavichord, the tone of which sounds thin and unsatisfactory for listeners today. The hammer action, the pianoforte, was introduced by Cristofori, yet not much use was made of it until Beethoven in his sonatas fully demonstrated its potentialities and the effects, not only technical but artistic, that could be achieved by its means, entirely different from those obtainable with its precursors. Today there is a certain revival of the earlier instruments, which has not only historical but also artistic justification when the old masters are played.

One sometimes wonders where the music of today is going to lead to. Even if one appreciates modern music as a mirror of the times, it is difficult to see in what direction it might develop. It appears to have exhausted its possibilities; more along those lines would be mere repetition. At any rate, it will have to give way to a different tendency.

This new tendency might be effected by a new craft in musical expression, a new technique. Indications seem to point to electronic musical instruments, partly replacing existing ones, partly complementing them. There have been such instruments for the past thirty years. They produce strange new sounds, rather eerie and unearthly, similar to the weird sounds of the aeolian harp. Whether such generators will ever lend themselves to the composition of great music cannot be told today; there seems to be a possibility that this will be achieved some day when electronic instruments are perfected. Various attempts by modern composers, such as K. Stockhausen, do not appear too encouraging; they seem to be curiosities rather than compositions of value.

It appears that, given these generators, a new genius must be forthcoming, one who will show what really can be done by using them, just as Bach showed the value of the equal temperament, or

Beethoven that of the hammer clavier. For the time being we are still waiting for that genius of the new electronic craft.

Talking about mastery of the craft, it is worth pointing out in this connection that a significant group of people who possess this mastery to a high degree are being excluded from our discussion. Nothing so far was said about that group, yet it seems to have tacitly been assumed that we do not include them in our subject. I mean the great performing artists, both actors and musical performers, including conductors.

This is a controversial subject. A play may be read by anybody, a musical piece may be reproduced by an amateur player or an amateur chamber music group or orchestra, but neither of these renditions will produce the effect intended by the playwright or the composer. In order to accomplish this latter task, reproducing artists are required without whose effort the greatest creations, especially in music, would be of little value for mankind. So far there is no controversy in the argument.

The creative element was rightfully stressed in our discussion. The question then may be asked, do these reproducing artists, the great ones among them, create or not? If they do, there would be no a priori reason not to include them among geniuses, provided they fulfill the other requirements. If, however, they do not create, then they are outside the scope of the present discussion.

Here now the disagreement begins. According to some, a composer had very specific ideas in mind when committing his work to paper. The execution of his composition is mostly indicated by proper signs and instructions, although in the works of earlier composers these are sometimes scant. Similarly, a playwright has a precise idea about the manner of presentation of his play on the stage. It is the duty of the performer or actor to attempt to reproduce the work exactly in the spirit of its creator. The more faithful his presentation, the better it is, and any serious deviation from that ideal must be branded as false and a violation of the author's or composer's true intentions.

When instructions are scarce, as in Sophocles or Euripides, or in Bach, it is of course difficult to know the original intentions, and it requires some research to make a correct estimate. In the case

of Bach, for example, Schweitzer, who studied Bach's life, his work and his time very thoroughly, and gave the matter much thought, recommends a quiet, unemotional rendering of his work, in a more or less uniform tempo and intensity.

Another school maintains that the instructions are never sufficient to give a clear picture of the intentions, even when there are seemingly enough of them, as in the nineteenth century compositions. It is then entirely permissible for the performer or conductor to vary the manner of presentation – within certain natural limits, of course. According to the most extreme of this school of thought, this variability open to the performer corresponds to a creative act. Where, now, is the truth in this controversy?

I am inclined to side with the second opinion – up to a certain point. We agree with the flexibility of presentation, the different interpretation of masterpieces according to the understanding of the performer. It is well known how widely differently Greek tragedies are being enacted on the stage; these different directions are all more or less justified. Some performers, actors in particular, can be so outstanding in their achievements that they cannot be easily forgotten. If one heard Emil Sauer play Chopin's G flat major Etude; saw Moissi in Ibsen's *Ghosts*, or Gründgens as Mephisto in the first part of *Faust*, he will have gained impressions that are not easily forgotten. This shows that there is plenty of room for individual interpretation by the performing artist.

Yet – should one call these interpretational activities of the artists, however outstanding, acts of creation? That cannot be. Whatever the interpretation, the masterpiece remains the same, even if the impression varies. Think of a Beethoven symphony, conducted by various great conductors: in spite of the differences in interpretation, it is and remains the same symphony, and that is the creation of the genius Beethoven. Or think of several opera singers performing the difficult role of Isolde; again there will be differences, no doubt, but it is always the same exciting, expressive score, whoever the singer and the conductor.

Originality of the creation is one of the chief criterions of genius, and this is largely missing in the performing artist, since

he only makes the original creation understandable to an audience. Both the creator and the performer must possess mastery of the craft. But the two kinds of craft are essentially different. The technique Rostand employed in his *L'Aiglon* was a truly creative one: not only did he use existing patterns of previous dramatists, but he also created his own dramatic form and style. The artistry of Sarah Bernhardt, consisting of unique recitation, facial expressions and gesturing all her own, served as a mirror for the work of art. The two achievements are not comparable.

8 UNIVERSALITY OF MIND

There is a feature that should be mentioned at this point; we might call it the universality of a genius. Universality means in the first place a knowledge, a familiarity with a wide variety of subjects, so wide, in fact, that it should cover, if possible, all fields of human endeavor. This is, of course, scarcely possible; it is only the ideal that actual instances approach. Let us take a case, Bernard Shaw. His knowledge was immense, covering literature, music, painting, philosophy, social sciences, medicine and probably others. There must be fields with which he was not familiar, yet the list is truly impressive. How one single man can know such a great deal is beyond comprehension – it is just what we find in the genius.

In a writer, this universal mind can be traced in his writings; Shaw's plays clearly indicate the scope of his knowledge. This is by no means so obvious with others. Take, for instance, a composer. A wide knowledge is not directly reflected in his music; we cannot tell whether such and such a composer was a man of wide knowledge. How, then, does it stand with the universality of a musician? The concept must be widened if it is to be applied to him. Let us take again a special case; it is always easier to think of concrete matters.

Take Chopin. From his work one cannot conclude that his was a universal mind; in fact, very likely it was not. Universality in his case means a wide gamut of human emotions mirrored in his music. He may not have been universal as knowledge goes, he was so in his understanding and penetration of emotions. One finds merriment in his mazurkas and sentimentality in his waltzes, festive mood in the polonaises, melancholy in the nocturnes, a mystic vein in the ballads, a capricious temperament in the scherzos. This is universal enough. We don't talk here of his artistic ability to

reproduce all these moods, rather of the versatility of his own mood which enabled him to picture them as masterfully as he did. It is in the same sense that the word is used for a painter. It is the width of the personality, the width of perception, the width of the entire mind that characterizes the great.

The question comes to mind whether this universal nature is present in all geniuses or not. Among the various features characteristic of a genius there are some that are not quite as essential as others. It appears, for instance, that there are great men who do not show an exceptional versatility of mind.

This must be so if we include famous scientists. Some of the readers will know from personal acquaintance with that illustrious caste, if not exactly geniuses, that they are often pathetically one-sided. The inability of some to talk about anything outside their bailiwick may strike an objective observer as odd, and a less tolerant one as exasperating. It is probable that there are also scientific geniuses who suffer from this shortcoming. We know of Archimedes that he was indignant when a soldier dared to approach his figures in the sand: he had to pay with his life for his disinterest in matters political and military. This absence of a universal mind may be found also among artists of a lesser genius. Neither Grieg nor Johann Strauss seem to reveal an exceptional universality in the mood of their music.

The reverse is also true. Versatility in itself does not make a genius. We meet people in everyday life who exhibit a remarkable degree of versatility of mind. They know quite a bit about everything, and I'm not thinking of those who merely pretend but of those who really have a wide mind and understanding. Universality has a significance only when it is coupled with the essential features discussed earlier.

There are those curious borderline cases, previously mentioned, when we are in doubt whether the man was a genius or only a wrongdoer on a grand scale, like certain rulers, warriors and tyrants of fame. Plato considered these latter plainly as the worst type of malefactors, but there are many today who idolize Napolean as a great man. As was said before, this is more or less a matter of personal view, depending on the judge's admiration for

or abhorrence of war and *gloire*. The trait of universality might help; if present, the man in question may be a great man. Napoleon devoted some time to civic affairs and sciences, even tried his hand at literature; his main interest, however, centered nearly exclusively around military operations.

Does the genius carry on his most important creative work in one or several fields? It is conceivable that his universal knowledge only helps him to exploit one particular kind of activity; it is also possible that he actually creates works of a varied kind. I have talked of those who belong to the first type. Let us now turn to those men who actually were great in several fields, who not only had a universal mind, but were multiple creators. There are not too many of this kind, and they certainly belong to the highest class.

One of the best known is Goethe who was a novelist, poet, playwright, philosopher, scientist, statesman, and a fair draughtsman to boot. Another is Albert Schweitzer: theologian, musician, philosopher, and a medical missionary, creatively active in all these fields. With our average human minds, we cannot understand how this is possible. Again, I wish to repeat: there are people among us who are active in more than one field, but not creatively, and if so, only in a minor and unimportant way. It is this combination of significant activity in more than one field that is so hard to comprehend.

Sometimes a genius is active not exactly in several, but at least in two fields. Leonardo da Vinci was an artist and a mechanical engineer, Thomas Mann a novelist and an essayist, Shaw a playwright and a music critic, Borodin a chemist and a composer, to mention a few. Sometimes they do this dual work simultaneously, more frequently, however, first one, later the other. This change of activity is a curious matter. One might think that they would be so absorbed in their creative work in the first field that they would never contemplate a change. To some extent such a procedure is in contrast with our driving force which, so it seems, would never permit abandonment of its goal in preference of another. There is, indeed, a rather human element in this matter.

Sometimes even the greatest are in their innermost heart in

doubt about the value of their creation. They are not entirely certain that it will survive, and are inclined to try another field where they might achieve greatness with better success. This secret motive of which they would not talk freely is not sufficiently realized by the rest of the world. Another motive, somewhat related, might be an actual drying up of the well. Invention can run out in a genius at a certain age, and the start of another activity is most welcome in such a case. Not all have the necessary talent for a second field. Bach, when he felt that he would only repeat himself, virtually stopped composing; his output toward his later years was very small. Tchaikovsky could not take the cessation of his inspiration very well; he openly complained of it, and possibly committed suicide by exposing himself to cholera infection. It is understandable that those who have a second talent switch over when doubts concerning their first begin to rise. Some famous physicists and chemists turned philosophers or economists in their later years: Mach, Haeckel and Ostwald, among others.

There is a bit of humor when a great man insists that his 'second genius' is not sufficiently appreciated by the world. Vanity plays its part. Goethe was rather disappointed that his theory of colors was not accepted by contemporary scientists. Leonardo would have liked it if his ingenious mechanical contraptions, his various war machines, had found better acceptance by the princes of his time. The human element, like a bright ray of sun, shines through the darkness and mystery surrounding a genius, and brings him a little closer to our earthbound hearts.

9 DEPTH OF PERCEPTION

The universality of a genius's mind has been emphasized, and rightly so. Universality—it is the width of the ocean. It reaches all sorts of shores. But the ocean is not only wide, it is also deep. There is a depth, characteristic of genius, which requires a few remarks.

When we say depth, we do not mean depth of thinking. What we wish to stress here, is depth of perception, the intensity with which he sees and hears everything around him. This intensity differentiates him markedly from his fellow creatures who as a rule look at things around them superficially. As we said, it is not depth of thinking we are concerned with because that is often found in other people. A business man in a conference, an engineer in consultation, an attorney at court – they all think hard. This is comparable to a certain degree to the thinking of a composer while at work which may also be strenuous, although not necessarily. This kind of depth may be common to all. But now let us look at people while in relaxation, when not occupied with work.

On the street they notice a man running. In a park they see an oddly shaped tree. During travel in a foreign country they hear a maidservant through an open window sing a strange melody. Most people will go by without giving these impressions much thought. Only few will stop and watch the running man, observe the twisted tree or listen to the strange song. It is this attitude we call depth of perception, a feature present in relatively few people. In a genius, it may be vital.

It is the reaction of the man to an impression that matters. In a genius this reaction is strong, his interest is fully awakened, he senses the unusual, the unexpected. He will search for possible motives, for causes and circumstances not seen on the surface, for the hidden element. He will connect it with other similar impres-

sions he had before, and draw conclusions from the similarity, or he will stress possible differences. If he is puzzled, he will ponder. And he will certainly remember the impression for possible future use.

In an artist the reaction is mainly aesthetic in character. He sees beauty where others see none. For him there is hidden beauty everywhere, in nature, in humans, in dead objects. It is easy to see how important strong reactions can be for an artist: they provide him material for his next creation.

In a scientific mind the reaction is toward a sensing of truth, hidden relations and laws: he will find problems in seemingly plain matters, plain to others. According as to whether he is a chemist, a botanist or a sociologist, he might on occasion see a correspondingly different problem in one and the same experience.

This matter of supersensitiveness often seems ridiculous to people not so inclined. And, indeed, the trait may rightly appear odd, if viewed objectively. And in a person who does not make proper use of it, it might be considered unnecessary; often it leads to an exalted temperament which others do not appreciate. In a genius, too, the trait will seem queer to others, but in his case it is very necessary, for without it he could not create. Depth of perception with him is essential.

This matter may be illustrated by a few examples. Many men in their early youth have gone through the harassing experience of a visit with a prostitute who seemed attractive at first sight and whose disappointing charms are discovered, alas, too late. The result is merely a bitter taste in the mouth. Not so with Baudelaire who, in a similar situation, thought of the contrast between that person and a beautiful woman whose heart he had not been able to soften. The result was the poem *Une nuit que j'étais* . . . in his *Fleurs du mal.*

The same poet, during a morning walk with his beloved, noticed a carrion on the roadside. Instead of hurrying away as everybody in his place would have done, he studied the putrefying bowels for a while and wrote one of his poignant poems, *Une charogne,* in which he tells his beloved that even if she were to look like that some day, her beauty would be preserved forever in his verses.

Variety shows are nothing but entertainment for common mortals. Toulouse-Lautrec, in contrast, studied the singers and dancers, not only their exterior, also their characters. His studies in the Moulin Rouge and the Moulin de la Galette led to the lithographs of such memorable figures as Yvette Guilbert and La Goulue.

In earlier times, when there were markets in public squares, the sight of some hurrying person knocking over a vegetable basket was probably common. E.T.A. Hoffmann's attention must have been caught by such an incident; he spun it out in his imagination as the beginning of the romantic adventures of a daydreaming youth, a tale he wrote down in *The Golden Pot.*

Plain sex experience is a matter everybody takes for granted without giving it too much thought. It is lucky that there are geniuses not quite so nonchalant about it. D. H. Lawrence studied the act from all possible angles: physiological, pathological, psychological, down to the minutest detail, including the experiences of both male and female. He used the material thus collected in his unique novel, *Lady Chatterley's Lover,* remarkable not only because of its poetical passages, but because it is the first instance in the annals of literature in which sex experience is openly and detailedly, yet inoffensively described. The study of an everyday event was the cornerstone to this achievement, a true feat of genius. This matter, sex in works of genius, will be taken up in greater detail in a later chapter.

Keen observation of nature in its endless variety is one of the characteristics of genius. Most of us enjoy nature superficially; even our descriptions "beautiful" or "breathtaking" remain merely exclamations without sincerity of feeling. This sincerity cannot be explained, it must be felt. Its contribution to creative achievement is manifold. For poets this depth of observing nature has ever been a chief source of inspiration. The same holds for writers: Thoreau's classical work is the outcome of his deep and intimate contact with nature. Nature is an inspiration for scientists as well: Alexander v. Humboldt's lifework on the entire natural history of South and Central America has its root in his deep observation of those countries during his travels.

Society and human nature is another fertile field. Consider that all of us spend a goodly portion of our lives in the company of people. The benefits? Distraction and connections. That is not the reason why great novelists cultivate society; for them the stupidest company, the most nonsensical small talk, the hollowest gossip is a cornucopia. Of course, in order for company to have such a magic value, the great novelist must be able to penetrate the dense brushwood of small talk and reach the very soul of people. From this penetration then emerge such masterpieces as Balzac's *Scènes* and Proust's *Temps perdu.*

In science depth of perception is so elementary a requirement that it is nearly redundant to mention it. Yet, there are curious aspects of it worth considering. One is that a great scientist sees a problem where a lesser one does not. Obviously one cannot solve a problem not perceived. This matter of finding unanswered questions — not trivial but essential ones — is characteristic of a great scientist. Darwin could never have evolved his theory if he had not seen thorny problems during his travel, problems certainly not lying open on the surface.

There is still another aspect. Let us assume a scientist follows up a particular trail. Now, those trails have a deceptive way of leading the man into trivial directions; the opening to the real secret is so small that the average scientist would never see it. Once gotten through, the true scientist discerns a path which is sometimes surprisingly straightforward. When results of this kind are published, others ask the usual question: "How is it that nobody thought of that before?" It seems so simple and evident, yet it needs a genial mind to penetrate the narrow opening.

An example will be of interest. We know the waves fast vessels leave in their trail on the surface of the water, and the reader may have heard of the acoustical waves produced by airplanes moving with supersonic speed. There exists an exact optical analog, produced by fast moving elementary particles, which is called Vavilov-Cerenkov radiation, after the men who discovered it, as mentioned in Chapter 2. The phenomenon was actually observed by other scientists, among others the Curie couple; they all misinterpreted it as a simple luminescence, until some years later its true and fundamental nature was discovered through deeper insight.

10 MEMORY

A few words about another feature of genius, memory, are in order. Observations point to the fact that a good memory belongs to the standard outfit of the great.

The matter is somewhat controversial, since it is not easy to see why the two should go together. The argument goes like this. It was mentioned that analogy plays an important role in the work of scientists; also, it was pointed out how invention works, and how it is often supplemented by material found in nature, in life, and in previous art works. In other words, both invention and craft require a large store of information from which the genius can draw at will and copiously. This is not just a phrase, rather a rigid requirement, as anybody would find if confronted with a task of productive nature. A genius, particularly in literature and science, is often a walking encyclopedia. The universality we were talking about is one of mind, mood and interest, whereas memory refers to heaps and heaps of data. It is universality on a lower level, like a general filing cabinet.

How important it is, one can see on reading great authors. Emerson wrote and talked with ease and rather volubly because of the vast store of his memory. Goethe – I am afraid we quote him quite often, there have not been too many of his kind in the world – Goethe was able to write his autobiographical novel only because when he was over sixty, he remembered so well the smallest detail of his early youth. True, he had noted down some details but not all. It is said that Fermi could take paper and pencil in a train, and jot down a calculation on any problem that came up in the course of conversation. Other scientists need handbooks for figures and formulas they do not carry in their mind. You see, memory is an excellent tool which is not only useful but actually indispensable for creative activity.

Or let us look at the matter from another angle. We just said that a good memory is valuable for creative work. Some prefer to think of memory not as a useful tool, but as a superlative gift bestowed by nature only upon certain privileged individuals as a mark of genius. It is questionable whether one should go along with this elevation of memory to a supreme position. At any rate, according to this belief, a genius who does not remember his very earliest childhood is unthinkable. Everything he experienced in life must be firmly imprinted in his mind.

The idea behind that thought is this. A distinguishing feature of genius, as explained in Chapter 9, is the depth of attention he pays to seemingly unimportant events and impressions. He will see a wood, which someone else looks at indifferently or, at most, with mild interest, with a feeling of deep appreciation: he will think of its beauty, its hidden mysteries, the flowers growing among the trees, the animals audible or visible only to the silent and patient watcher, the tales associated with dark forests, and many other associations. This depth of perception distinguishes him since his earliest childhood. If, then, he sees a forest, which particularly appeals to him, in his childhood, say, at the age of six, the impression will be so deep that he might never forget it. Another person would not even remember that he ever saw that forest as a child. Memory, according to this idea, is interwoven with the depth of perception that leads to the imprint. So it is with all other perceptions, whether in relation to nature or learning, and so depth of perception may be looked upon as the cause of a good memory in outstanding minds. Plato stresses the importance of a good memory in a poignant manner: a person who does not retain what he has learned has a mind like a sieve, and he is better off if he doesn't attempt to learn. Need I tell that many of us wince when we read that?

Some believe that memory can be acquired by training. I can hardly believe that. It is the same as with other traits of genius: you must be born with them. Of course, an average memory can be improved somewhat by proper exercise, but the result is in most cases insignificant and rather discouraging. An average person with a poor memory better look for artificial means as substitute, such

as notebooks and pads, instead of trying to develop an ability which becomes rather worse than better with age.

Hence, memory as an innate gift forms an integral part of the picture we form of a genius. Without it, he would live in the present only with his past more or less absent. Details would be lost, which are precisely the building stones of one's spiritual world. The complexity and maturity of the mind of a genius is largely conditioned by his ability to retain everything he has experienced.

Curious as it sounds, an extraordinary memory can be a handicap sometimes, if not for the true genius, at least for the lesser grades. The brain has a certain limited capacity, and this holds for the great as well. At some future epoch it will be possible to express mental capacity in chemical terms, today we can describe it only vaguely. The brain consists of a large but limited number of cells performing a dual work: they store information and utilize it for something new. Although the two functions are performed by different structures, the two might compete for room to a certain extent. Excessive development of one type of structure might hinder the spread of the other. A person with a brain having too many storing elements might, by sheer limitation of room, possess relatively fewer associative elements, which produce the "new" and underlie creation.

Among outstanding people, not geniuses, there is often an inverse relation between encyclopedic knowledge and originality. People with a wide knowledge are often not particularly original, and vice versa. Professors can actually be classed into these two groups, as one will recall from his college years. Original discoveries are made often by novices whose knowledge is neither too wide nor too settled. This illustrates our point: too much information is not conducive to original work. A good way for a scientist to attack a new problem is this: without going into a deep study of the matter, one follows his intuition and carries on experiments that might lead him to the right solution. Only after having done a good part of the work and having obtained results, does he look into the literature on the subject and put the finishing touches on his work in the light of what has been achieved by

others. Although all this goes for "lesser lights," it must be true to some degree also in regard to the genius. Age is an all-important factor with the genius – in a later chapter we will go into that aspect; all I want to say here is that original work is often accomplished by the young genius whose mind is not cluttered up with too much information fixed by a too good memory. Even the mind of a genius, when he is old, might become saturated, and blind toward the new and young.

And finally, there have been geniuses without an excessively good memory. Einstein used to say that he would never bother remembering all the formulas he needed for computation, he could look them up in books when needed. And Verlaine, as he went through the various stages of his life, had a remarkable ability to forget what had gone on in the previous ones; otherwise he could not have written his overamorous *Chansons pour elle* only half a year after his ascetic *Bonheur* which is seeped in piety.

Memory as a feature of genius has received some bad repute from those "geniuses" whose only qualification is just that. We find them mostly on variety shows, and their ability to remember sequences is calculated to baffle even an intelligent audience. They are acrobats of memory, just as others are muscular acrobats. Their achievements should not be minimized; they are as noteworthy as the complete absence of any other trait of genius in their owners. Memory artistes are a good example of the insignificance of a particular trait of genius if not coupled with others. The fact that simple-minded people think highly of these artistes makes us wonder whether a trait as petty in itself could really be important among the features of genius.

Do not let this confuse you. All in all, good memory is a highly desirable feature of a creative man.

11 PERSEVERANCE

It is often stated that industry is the chief means by which anything great can be achieved. The statement is superficial; we have shown that there are many more factors involved. And we have by no means finished yet. There is quite a bit more to add. However, the statement shows that we might be blamed for omission if we did not mention the qualification of perseverance, or, using a simpler word, patience.

Actually, the trait was implied by our comments on the seemingly compulsory character of creative activity. Indeed, various overlappings can be hardly avoided in discourses of this nature. Every so often we have to come back to topics previously touched upon. The topic might be the same, yet looked upon from a different angle.

Similarly here. A quasi-external constraint under which a genius works lends him, as we said, a demoniacal aspect. In contrast, perseverance is a very human feature; there is not a trace of the demoniacal about it. It is even wider than human, it is simply an animal feature. It is exemplified by ants and bees, horses and oxen. It is scarcely possible to find a feature that invokes the association with a genius to a lesser degree than patience. A farmer tilling his soil from early morning till evening is certainly no genius, nor a gardener weeding his lawn. Patience is rather a virtue but as such not a sign of genius.

Yet there exists a connection. One does not need to be a scholar or a psychologist to sense that creative work requires patience. An impatient man, one who has no perserverance, cannot very well create something great. There are possible exceptions, but certainly few. Also, certain types of work require less patience than others. The length of a particular work is of some importance in this respect. The length of a work is, generally speaking, not related

to its quality; some of the great masterpieces are short, such as lyric poems. For these, patience is not as essential as for a novel or a play. One is apt to think that the writing of a poem is merely a matter of inspiration, needing little more than jotting down the lines as soon as they are born. This is basically true: a lyric poet needs little filing and few changes in his poetical offspring; if he needs more, he is probably no great genius. Thus, a lyric poet, who is exclusively that and nothing else, requires relatively little perseverance. There are not many of this type because most lyric poets wrote longer pieces too; Keats, Byron, Shelley are examples. The same holds true for painting, size of the picture replacing length.

A long literary work, a book on a philosophical or economic subject, a mural — these are typical instances requiring patience. As I said before, this in itself is no reason to regard them as superior to little products. Yet there is a fundamental difference between the two: a large work needs considerable thought, preparation and designing, things not necessary for the small. Design and planning are elaborate functions, requiring time and energy for their execution. Due to the intimate connection between the ramified parts, each must be worked out with one eye upon the rest; every change in a detail might involve changes in other details. This complexity belongs to any large project, even those that are essentially of a routine nature, such as the building of a house or a bridge. The complexity increases immensely when the work is a new one, of a creative kind. Besides invention and mastery, the two chief pillars, simple perseverance then becomes an inestimable servant, without which the work could not be finished. Leonardo da Vinci's *Last Supper* has barely survived to our times; while it is known that the Dominican prior unduly hurried him, it is possible that he himself did not exercise the necessary care to execute it in a sufficiently permanent manner, or did not spend enough time with the preparations of the mural which should never have been painted on the wall of the refectory of Santa Maria delle Grazie. Wagner spent many years on each of his operas; with interruptions he restarted again and again, until finally the work was finished: a typical example of the perserverance for creating a masterpiece.

Scientists need even more patience than artists. The length of a work was mentioned as a measure of the importance of perseverance. A work of art has a finite length even in a mammoth work. Wagner's *Ring des Nibelungen*, Proust's *A la recherche du temps perdu*, Balzac's *Scènes de la vie privée*, however voluminous, are complete. Not so with the work of the scientific genius. Science is a chain of many links, and even the greatest of its contributors supplies only links; there is no such thing as completeness. After the small contributors have seemingly completed a particular branch of science and an apparent deadend is reached, a genius appears and supplies an unexpected link which opens up new vistas and possibilities for further generations of workers. Thus, a scientific problem is basically endless: each solution brings along another problem. Gems comparable to lyric poems or miniature paintings do not exist. This endlessness of science was in the mind of Ludwig Boltzmann who at the turn of our century expressed his regret not to live to see the coming new in theoretical physics, then seemingly rounded off. Prophetically, he must have had quantum mechanics in his mind. The same endlessness of science may be seen in the lifework of Einstein who could not complete his work on the unified field.

Think, then, of the patience required for working on a problem that has no beginning and no end. That patience is, indeed, endless like the problem itself. The scientist never enjoys the comfort a finished work affords. Goethe with deep insight realized the pathetic condition of scientific research when his Faust comments on the industry of his famulus who was "happy if, digging for treasures, finds an earthworm." The endless patience of the scientist with its tragic implications is sharply brought to light in that passage. Not only the little man of science, also the genius needs the utmost perseverance. For scientific work is inherently difficult: it is not incorrect to state that a scientist faces more obstacles along his path than an artist. His chief obstacle is the "malice of objects," as F. T. Vischer said facetiously, implying that nature has particular fun in leading the scientist astray who, after months or years of research, finds that he was misled in his suppositions, and has not found the hoped-for solutions. Fritz Haber spent many years on

developing a technique for the extraction of gold from the ocean; after years he finally had to give the matter up. No wonder if a scientific genius becomes an odd person: continual thinking about the torturing difficulties in his work every day makes him appear queer in the eyes of the average man.

The difficulties of the subject, whether in art or science, are not the only reason why the genius needs perseverance. I am alluding to the absence of success, which, by normal standards, can easily discourage a man's efforts. In daily life it is found not infrequently that continued disappointments curtail a person's interest in his work; he either becomes indifferent, even lax, or changes to another occupation. We mentioned such a possibility in the later years of the genius; what we are concerned with here occurs rather in the early phases of his life.

Success to a genius does not come easily. This was particularly true in earlier times, nowadays unrecognized geniuses are less frequently encountered, although there are some. Bartók, appreciated only after his death, is a case in point, Kafka, another. Earlier, however, there were many; it is enough to recall Rembrandt, Bach, Mozart, Schubert, Keats and Whitman.

The patience the man requires under these conditions is nearly superhuman. Imagine him, working under mostly adverse economic circumstances, if not in poverty, creating work of whose value he is firmly convinced, and finding that people around him are indifferent to his output: they either do not notice it, or if they do, receive it coolly or actually reject it. Critics do their part, bad reviews are the order of the day. More shall be said about these matters later; here I merely point out the necessity of perseverance if the man is to continue his work. Sometimes the trend slowly changes, rewarding him for his stamina and steadiness; in other cases the situation remains unchanged during his entire lifetime. Continuing absence of recognition may tax his strength to the utmost, if he is not strong enough, he may break down under the strain. Such cases are luckily rare, the quasi-external force sustains him in the heaviest of trials. The man of genius, if unrecognized and of a sensitive nature, can be the most unhappy among all

humanity. Mere patience is not enough, it must be coupled with unbounded faith in his vocation, and a doggedness of which an impartial observer is unable to say whether it is virtue or foible, the less so as he is unable to judge whether the work is truly great or not.

12 PROLIFICNESS

Prolificness is frequently observed in geniuses. It might be thought a secondary attribute, since it is the quality of the product that stamps its creator a genius. Quantity has little to do with the matter. Yet the fact stands; a great writer or artist often produces a great deal.

It was pointed out in Chapter 10 that a genius is in possession of a vast store of information. Information is not the best word, it is too narrow for what we want to say. It is a horn of plenty, whether filled with scientific material, or melodies. It is a seemingly magic bag at the man's disposal into which he has only to reach, and out comes another of his products. The bag seems to be bottomless, practically inexhaustible—except for certain physiological limitations of which more will be said later in connection with genius and his age.

In many instances the magic bag has not so magical sources: study for the scientist, listening for the writer, observing for the painter. Only the musician has no demonstrable source, for which reason he might be thought the greatest of all geniuses. By whatever means the bag is kept filled, it is filled. Compare a masterpiece with the product of a lesser worker and you will immediately notice this difference: only the former has the character of being formed out of plenty, the latter, even if basically good, is thin, as if the man had put everything he possessed into it so that nothing remained with him.

A genius goes on producing and never seems to come to an end, many only through an untimely death; these, without doubt, would have continued, had they lived on. Of course, this brings up another, not less interesting question. If a genius produces such a great amount, one could ask: are all his products of equally high quality?

One is inclined to answer the question in the negative. Indeed, the quality of the work of a great man is bound to fluctuate. The quality of a work depends not only on the man, but to a certain degree also on circumstances. It depends on the state of his health, on circumstances in his immediate surroundings, and not to the least on that imponderable, commonly called mood. Mood is the sum of those internal influences for which no physiological explanation can be offered. Its importance is well known to all of us, and it would be wrong to deny that it is equally important to a great man. To some degree a strong will can counteract it; I do not think, however, that a strong will, in the sense of self-control, is a general characteristic of the genius.

Not only circumstances and mood, the subject itself can affect the quality of the product. Certain subjects have a greater appeal than others. It is true that he will automatically choose those that interest him most. However, the subject is not always entirely a matter of his own choice, it is often suggested by others: some portraits of Rembrandt, the *Goldberg Variations* of Bach, the violin concertos of Mozart. These are works that the artist, if it had depended on him alone, would not have executed. It stands to reason that such assignments do not always have the same quality as works of an entirely spontaneous origin.

The freedom of the genius—what a fascinating subject! More will be said of it in another connection. Here I will merely emphasize that the resonance of the subject with the true personality of the man will by necessity influence the quality of the work. For these various reasons a survey of the man's vast production might show a certain variation in excellence.

Let us now look at the facts. What do they indicate when compared with the expectation as outlined? Something rather interesting. The very greatest of geniuses—and it is these with whom we are mainly concerned—do not show the variation mentioned, or only to a minor degree. There does not exist a composition of Beethoven that might be termed of lesser quality. Practically the same holds for Mozart, despite the fact that some of his work was done at the request of others. That does not mean that some of their works could not be preferred to others;

that is quite possible, the choice will depend mainly on the taste of the judge. The point is that none is of lesser quality. There is not one of Planck's papers or books that would not show the utmost in depth, originality and clarity.

In contrast to this, there are great men—not among the greatest—whose work clearly indicates the variation in excellence mentioned. Liszt, Berlioz, Schiller, Heine, Velasquez, to name a few, are of this kind. Their work is of varied quality, excellent pieces stand beside minor ones. This variation is a fairly good criterion for the distinction between the greatest and the great. You will find that it holds quite generally. Both groups can be and often are prolific, both produce much work, the fountain is rich and seems bottomless. It is the uniformity of quality that is present in one group and missing in the other. In this respect the second group is just a little closer to the rest of us who show the variation in our modest daily work to a very marked degree. The first group is nearly unnatural in this regard: I have tried to explain that with such prolific production there are many factors that could cause a variation in quality, yet the truly great are unaffected by these natural and ubiquitous factors.

Not all geniuses are prolific; there are exceptions, although few. And for this very reason they are interesting. These are the masters of concentration: they understood to say much by little. It is a remarkable feature, this compactness; unusual, as I said before, because most of the great are so full of what they cherish that they bring it forth again and again, even if, as often is the case, it is "Variations on an Original Theme." Among those who excelled in compactness I should like to mention Schopenhauer who actually prided himself on being an "oligographer," writing only, "when he had something to say." And, for a fact, scarcely any other writer surpassed him in precision and succinctness.

Among scientists, Einstein is one whose literary output is rather compact; his books are not too numerous; besides two brief introductory books into his theory of relativity there are only a few collections of his scattered essays and talks. This

sparseness is in striking contrast to the vast inner contents of his work.

Chopin's work is contained mainly in three volumes of piano music. One might think this paucity was due to his short life. This is not quite so, as may be seen when you compare his forty years' output with the numerous works of, say, Schubert who lived only to the age of thirty-one. It is rather the result of a conciseness in expression.

Finally, there are freak cases like that of Bizet who, besides some work of lesser significance, left only one masterpiece. He was able to compress everything he had to say into that single work. Very unusual, indeed. Some might be inclined to consider it a defect of some sort. I do not think so.

Generally, one can say: the genius, during his period of activity, feels he cannot live long enough to bring forth all he carries within his mind.

III

PERSONAL AND SOCIAL CHARACTERISTICS OF THE GENIUS

13 CHARACTER TRAITS

We have been discussing so far the genius's personal characteristics essential for his creative activity. Let us continue with some other features not strictly necessary for his work. They are not so much the cause as rather the consequence of his genius. Or, we might say, they are certain general biographical traits, personal and social, not belonging to any particular one. I'll begin this part of our discourses by talking of the character, or if you prefer, the ethics of a genius.

Without subscribing to every word the fire-spitting philosopher Nietzsche uttered in his writings, we certainly agree with his views on morals, if perhaps not in such colorful terms as he employed. He was contemptuous toward the standard conception about morals and considered it as sign of weakness and hypocrisy. Moreover, he did not believe in an absolute moral, in absolute goodness and badness. There is great truth in this. Absolute principles on ethical behavior are scarcely imaginable; they are set up by individuals, groups and nations to suit their needs, conditioned by locale and time. The principles vary from one country to another, from one century to another, although some might show relatively little variation in the short time of our known historical development. Even in that relatively short time there have been changes. To take but one example, not to kill: at the time of the Romans, killing a servant, a slave, for a minor cause was not unethical; today, such an action would be manslaughter.

This principle of relativity of ethics finds a striking application to our present topic, the genius. Moral principles, as we said, must suit the need of the individual or a group. The genius is a very special individual, as we have amply demonstrated so far;

it is nearly impossible that the same moral principles that suit an average human being should suit his special needs. A genius cannot be judged by average standards. Although he must, of course, conform to the law, as anybody else, one must be broad-minded in judging him from an ethical standpoint. To this end we must try to understand his special needs. Some people, not realizing those needs, censure them unjustifiedly. Let us review, then, briefly certain character traits of the genius, often condemned in the average man, but to be condoned in the exceptional. The features to be enumerated are frequently, not always, found as traits of great men.

As a rule, a genius is egocentric. It cannot be otherwise; he finds himself mostly among people who, even if they do appreciate his work, do not actually understand him. As a result, he sees himself isolated in his surroundings. The lack of understanding is often mutual: he does not find pleasure in the amusements of others, since his interests are different. His loneliness is one of his basic features, and, as a result, an invisible wall is erected between himself and his surroundings. He lives in a world of his own. While his egocentric nature is little concern to his wider acquaintance, it can be hard on his immediate circle, on his wife and children. This is not always so: there have been some loving husbands and fathers among the great: Wagner and Goethe are examples, and Thomas Mann said that among his creations he loved his children most. Various ramifications of this egocentricism are rather interesting; we will enlarge on some in later chapters.

The genius is sometimes conceited and haughty. He knows that he is different from the rest, and, in fact, superior to them. This is not a lovable trait, and in an average person actually repelling. In the great it is understandable and may be excused. Shaw is known to have been conceited, and extremely sarcastic toward the common crowd whenever it approached him. Beethoven was conscious of his superiority and did not conceal his opinion. One should not forget that what is commonly called haughtiness may in reality be something different, such as exaggerated witticism, or an assumed attitude to hide shyness, a frequent attribute of the great. Sometimes, however, it is genuine. Schopenhauer's philoso-

phy condemns the major part of humanity for being inconceivably stupid. Whether he was right or not, it is obvious that he must have felt keenly his exceptional position, being able to discover, point out and describe the endless stupidity of mankind; this ability automatically implied that he was among the few exceptions. If he had been a humble character, he would not have written his immortal works; his private ethics served his creative needs.

To avoid misunderstanding, I wish to emphasize: a genius's character is not generally inferior to the standard; I hope the reader did not gain that impression. The point is that his character is by no means impeccable, as some tacitly expect. He may exhibit incidental weaknesses; we are not concerned with those. Again, he may exhibit weaknesses that show a definite correlation with his genius; it is these we are talking about.

A genius is often of a jealous nature. How natural this is! He is a man who works hard, who has excessive aims, and who mostly meets indifference and animosity during the early part of his life. Finally his greatness is acknowledged and he becomes famous. Then another man appears who is younger, who has ideas different from his, new methods, more advanced views, and threatens to weaken his strenuously gained position, to overshadow his own views, principles, for which he had fought during the best part of his life. His jealousy is aroused, and the result are rivalries of which many are known. The sad story of Schiller and Hölderlin is a typical example. Haydn made contemptuous remarks about Beethoven; Brahms and Bruckner derided each other; Mahler hated Strauss for his success. One reads amazed of these animosities: how is it possible that a man like Brahms did not have an eye for the majesty in Bruckner's music? He very likely had, and just that insight aroused his pardonable jealousy, inciting him to derisive comments. As may be seen, the degree of his own success is not a decisive factor; jealousy is found in the highly successful as well as in the unsuccessful genius. It is one of their universal traits; I believe there are few in whom it is entirely absent.

A further excusable trait in a great man is vanity. Mention was made of this before. It is not a universal feature, and belongs rather among the foibles than the defects of character. One is apt

rather to smile than to frown. Courbet was known to be excessively vain, so was Wagner. And among scientists there were plenty. It is amusing inasmuch as one finds it frequently among the great of the second order; it appears that it is promoted by a mild degree of inferiority complex.

Let me mention a subject that deserves special treatment; it will be discussed in detail in Chapter 18. I mean the sex life of the genius. In a sense it belongs into the present discussion on character. It has been said that a man's character is revealed by the manner in which he deals with women and money. A genius, and particularly the artistic type, has its own way of dealing with women, which is not always in conformity with the way of mediocre people. Conscientiousness with regard to women is not exactly a strong point of artists.

Since I mentioned money a moment ago, let us finish this survey of the "vices" of a genius with his dealings in that matter. It was explained in Chapter 4 that the hoarding of money is never a great man's chief purpose. The fact that some were reasonably wealthy, either because of their parentage or unexpected income through their work, is not in contradiction with the statement, since it could hardly be expected that they refuse what is their due. Far from hoarding money, they actually squander it in a rather unreasonable fashion. Nikola Tesla, the inventor of electrical generators, was such a typical squanderer. Many were poor for that reason. Lack of economy with the corresponding liking for some of life's luxuries characterizes many a poet and musician. This is a consequence of their unconventional way of living, and is thus not surprising. Some geniuses were convinced that society, especially the rich, had the duty to provide for their worldly needs. Wagner's letters expressed this in clear terms: the rich who provided him with money were to feel flattered and happy, he owed them no thanks. Considering what he actually did create, his standpoint was perhaps not so wrong.

More surprising is the attitude of avariciousness found in some of these people. Schopenhauer who was reasonably well situated displayed this weakness. He probably realized that he could not expect a large income from his writings, and since he felt that he

had still more to say, he did not wish to spend the years he badly needed in poverty. Shaw is known to have been rather strict in his dealings with publishers and other businessmen, and he is probably not the only one with a similar record. The explanation is not so easy, and if anyone is inclined to look upon this as a sign of lack of true genius in the man, there is not much we can say in rebuttal if we want to be consistent.

Extremes in the nature of illegal activities in money matters are rare. A case in point is François Villon who by poverty was driven to become a member of a band of thieves. This circumstance, however illegal, in no way detracts from the recognition we owe him as the first medieval lyric poet of power and convincing sincerity.

14 OUTSIDE INTERESTS

Within the frame of a general biography of the genius the question can be asked: what particular aspects of life does a genius appreciate most? Since these men have natures and inclinations of great diversity, a straight and generally applicable answer to the question cannot be given. Indeed, nothing appears more natural than a diversity of the objects they value.

Mention was made, for instance, of the inclination of some of them for the luxuries of life, although the greatest lived in simple circumstances. It would be wrong if one wanted to exclude those luxuries from among the objects a genius does, under circumstances, appreciate.

Reading the works of the masters, or glancing into their biographies or into letters they wrote gives the impression that there are two fields of particular and fairly consistent interest to a great man. In discussing these, we must, of course, keep in mind not to include any special field with which the man is directly concerned. What we are talking about is the side interest of the genius, what he considers the best in life, on which he spends his free time. The word, relaxation of the genius, could have been used to describe our subject; we preferred, however, not to use the word, somewhat slight for what is implied. It should be clear from what we have said that a valuation of his own field is too obvious to be an answer to our question.

Two fields, we have said, will be very consistently found among those for which geniuses often express admiration. The one is nature. A great man is nature-loving.

This may show itself in various ways. There will be one who likes a walk in the open country, not necessarily in some spectacular parts, rather in plain woods and fields, not presenting sights of exceptional beauty. What he likes is nature in itself, in

its elementary typical form. Another, physically more active, will seek the vicinity of water, notably swimming or sailing, occupations that give plenty of opportunity to contemplate the infinite beauty of water. Proust does not tire of describing the endless variety of aspects the sea offers, an obviously autobiographical trait. Still others spend much of their free time with active gardening work, as known of Goethe or Shaw.

There must be a definite reason of this liking for nature, quite often found among the great, a reason not hard to guess. Nature is the original form of creation, a fact that has a particular appeal for a man whose chief function in life is creating. This creative element in nature is very striking in its biological manifestations, whether in animals or plants. Creation covers both reproduction and evolution. Evolution in the Darwinian sense is true creation, since new species are being developed from the old. Not only among the living, in the inanimate world, too, new is being developed in the course of times, as known from geological findings concerning the surface of the earth. Going still one step further, solar systems undergo changes within astronomical times, phenomena better understood since the advent of nuclear physics. An adherent of Henri Bergson might cover all these phenomena under his concept of creative evolution.

Essential in the present connection is the similarity of these processes with the activity of a genius. Whether he is conscious of the similarity or not, it must be the main reason of his admiration for nature. He feels that, like nature, he is a vessel of that elementary force that produces the new without his own deliberate intention. Hence his deep-rooted love for everything natural, for Andersen's genuine nightingale in contrast to the cheap artificial imitation which pleases only the lowly mind.

The second domain for which he has interest is art, not the one in which he happens to be active, rather, art generally. This holds for all great artists and scientists alike, which points to the meaning of this interest. Nearly all great scientists love the arts, while the opposite does not hold: only very few great artists will show an interest in science. Arts are great and universal, similar to nature in this respect; they appeal quite generally to all geniuses,

whatever their own field happens to be. The reason, of course, is the same as with respect to nature: the creative element, so predominant in works of art, has a strong appeal for all creative men, whether scientist or artist. Quite intuitively, a philosopher, a poet, a physicist loves music, although they have professionally nothing to do with it. They love it as the highest of recreations; Socrates, Shakespeare, Nietzsche and Planck were lovers of music.

It is no wonder then that many play a musical instrument, that they are interested in great painting. Creation everywhere! Proust goes into endless details about the paintings of his fictitious artist Elstir; the latter has nothing to do with the plot of his story, he merely serves for the writer to enlarge on the art of painting. Similarly he deals with Vinteuil's sonata; the love with which he returns repetitiously to the "little phrase" in that sonata is touching. Thomas Mann's exacting technical description of Leverkühn's musical creations is scarcely necessary for the promotion of his plot; it shows, however, the scope of the interest the writer had in music.

There is scarcely a genius without an overwhelming general interest for arts. (Note: an interest for arts does not make a genius.)

15 RELATION TO SOCIETY

In Chapter 13 we spoke of character. Now, character is the sum of a person's ethical traits, pertaining to his own views, ideas and behavior. Strictly speaking, the character of a person is a feature of his own being, without direct reference to others. A person, living alone in a forest, has his peculiar character, the same he would exhibit in human society, although some features of it might stay latent in the absence of human relations. Basically a man is good or bad, whether he meets others or not.

Apart from this feature, one can inquire into the behavior of a person in relation to others. These features are not character traits, they are simply the sum of his acts toward others, or, one might say, society in general. Let us then say a few words of the attitude of the genius toward society. Although various remarks along this line have been made earlier, a brief discussion of the matter will be in order. The subject has general interest. There are many people who could not comment on a drama of Sophocles or a painting of El Greco, let alone the works of scientific geniuses, such as Newton or Kepler. Yet they may be fascinated by the relation of genius to society, even though the work of genius is somewhat beyond their grasp.

It was said, and rightly, that a genius is radically different from others. It is enough to recall that he works under a strange constraint which seems to emanate from an external, invisible source; that often his work is for posterity only, not for the contemporaries for whose taste or knowledge he is too advanced. He is a creature of a different stamp, although biologically of the same species. However, the average observer is not concerned with biology or anthropology; he relies on his direct impressions which tell him that a man of genius is a foreigner to him. As much a foreigner as a Chinese or an Indian to a Westerner, and even

more so. Of course, few are lucky enough to have the opportunity of meeting a true genius, they are much too rare for that. What we say here holds also for the lesser genius who is invaluable for us curious observers in that, being more frequent, he permits us to have a glimpse at certain characteristics which he happens to share with his elusive big brother.

There they are, the genius and society, facing each other with a sense of unpleasant helplessness. As for society, its reaction to the strange "bug" is clear-cut, prescribing a straightforward path to follow. It considers the creature abnormal, inhuman, unworldly; to occupy itself with him appears hopeless and a waste of time. This attitude prevails during the major part of the genius's life; if his achievements become generally recognized, it is modified by a cowed admiration, without, however, becoming basically altered: inwardly, society feels equally repulsed, whether the man is unrecognized or famous. This attitude of society does not necessarily result in animosity in action: it is an attitude in social behavior, even in instances when society feels compelled to extend active assistance, moral or financial.

The behavior of the genius toward society is also understandable. The average person is a stranger to him, with very few ideas in common. The interests of his fellow men he does not share, he has little understanding for them. Matters of everyday life, the concerns of his acquaintances and relatives, matters of job security, savings and investments, the purchase of life's commodities are mostly matters to which he attends by necessity, without the thought, time and preference given them by others. The amusements of the latter seem primitive to him: the reading of low-class literature, including newspapers, the attendance of shows or competitive sports events, to mention a few, do not, as means of relaxation, seem worth his leisure time. Even matters of general interest, such as politics, or current economic conditions appear shallow and ephemeral in his eyes, changing too rapidly to merit attention. What is the result? When he meets a person in society, he does not know what to talk about, just as the latter is at a loss for topics of possible mutual interest. An atmosphere is created that is little conducive to friendly relations.

This might result in shyness. A genius is usually shy in company. He is branded an introvert. Other more colorful expressions, such as "lone wolf" are not infrequently applied. These words may be justified, although not necessarily. The genius may be genuinely introvert, or he may only behave so because of lack of congenial company. If he luckily meets someone congenial, his shyness miraculously disappears; it then becomes obvious that the latter was only apparent, caused by the absence of any common ground with his fellow men. Such a situation is deplorable both for him and for society. Luckily, not always. There are geniuses who are exceptions to the rule, and who are, as the colloquial terminology goes, good "mixers." They are rarely found among the truly great, more frequently among the minor sort of geniuses, the incomplete ones.

Shyness is a gentle trait; there are worse. A genius may be definitely unfriendly. We are touching on a point raised in Chapter 13, concerning conceit. Although the two aspects touch, they are in reality different. Conceit is a frame of mind, unfriendliness a behavioral trait. The latter might be a consequence of the former, or it can exist without it. It is simply a stronger form of shyness. Reading between the lines in biographies or letters, we may conclude that many great men are more or less unfriendly to the common lot. Planck, for example, was of cold and stern behavior. The well-known friendly type of professor who is kind and helpful to students and colleagues is often an excellent man in his field but rarely found among the truly great.

Still a step further along this line is the rude genius. There are probably not many of these. If, however, the genius is a wit, he probably cannot help his rude answer to a niaiserie or some officious question. Dumas père and Shaw were known for this kind of rudeness, so was Brahms. This trait in behavior is not exactly a virtue in the usual sense, in a genius it is pardonable because of society's generally hostile attitude.

Whichever way we look upon this matter, the conclusion is that a genius and society do not see eye to eye. And this, as I said earlier, is entirely understandable. Society, an assembly of people such as you and myself, appreciates most of all conformity.

No greater atrocity can it imagine than deviation from accepted standards. A genius is one who more than any other commits the atrocity, and society cannot forgive that. The whole development of humanity can be traced to the work of geniuses whose new thoughts are gradually and slowly accepted by the rest. These new thoughts, although beneficial to society in the long run, are strongly resented by contemporaries, which in a way is natural, since any group of people automatically objects to any innovation. The new thoughts of a genius are not only innovations in the everyday sense, they involve the very foundations of economy, science and technology as well as cultural values; no wonder that a genius is highly distrusted by and unwelcome to society which naturally clings to its own foundations, its own time-proven system in every phase of life. The reaction of the genius to this hostility becomes evident in those traits I have briefly outlined: they are its natural consequence.

16 DILUTED CONCEPT OF GENIUS

The following remarks are of the nature of an appendix to the previous chapter dealing with the relation of the genius to society. These remarks have to do with the so-called diluted concept of genius, mentioned in Part I of this discunsion. Essentially, this dilution is caused by the way society reacts upon the phenomenon genius.

Look at all those "geniuses" around us. There is the child, perhaps a shade brighter than the average, whose mother is firmly convinced that he is something truly exceptional. She will not be shaken in her belief, until he becomes a clerk, marries and is the father of three children. There is the politician, a clever and shrewd person, who is acclaimed by his followers a light, a boon for the country. Yet nearly always he is forgotten soon after his activities have stopped. Or think of the tenor who in his innermost heart is convinced – or, if not, he asserts it to others – that a singer such as he has never existed before. The critics, too, hail him as a celebrity. There is the scientist who contributed his bit to that vast edifice, science; if his contribution has practical value, not only he and his colleagues are convinced of his greatness, but also the newspapers and magazines keep pointing to his genius.

What is the explanation of these exaggerations? First, there is a certain tendency in many of us to imitate others, particularly those worth while imitating. A great man is certainly worth it, and so we do our best to imitate him in order to become great, too. It is the old argument: If he could do it, I can. And we try. Not all of us, of course, but such as have some talent at least. Some of us believe in our achievements, others of us might come to the conclusion that our efforts have been more or less in vain, but we will not easily admit it either to ourselves or to others. We insist on showing our products, often much better hidden, and if we are

lucky enough to find sympathetic listeners, they nod approvingly and praise our achievement out of proportion to its real merit.

Even disregarding this inborn instinct for imitation, effective in many cases, there is the general desire in all of us to be somebody, to be acknowledged. There is practically nobody without that ambition. One might think that a simple man, whether a farmer, worker or clerk, or a plain country doctor, would have no such ambitions, that he realized his own limitations too well to cherish unjustified hopes in that regard. Intimate conversations with such people show that this assumption is wrong: many had been at some time or another during their life the victims of ambitions later found to be impossible. But now consider those who have some talent, perhaps moderate, perhaps quite appreciable; they will do their utmost to make use of it and show to the world that they are great. It is not enough to show it, they will have to hammer away on their alleged excellence, until finally, when the hammering has gone on long enough, their audience will accept their thesis and acclaim them great men.

This is not the whole story. There is something more deeply rooted in this willingness of the audience to accept long enough asserted claims. Obviously there may be some in the audience who themselves hope to be acclaimed great some day. Should they act indifferently or even with reluctance toward a momentary claimant, or actually turn his claims down, they would merely spoil their own chances to become elected into the chosen group at another time. It is in their own interest that the select group of geniuses be sufficiently wide so as to include them when they would raise the claim. This is the basic reason for the diluted concept.

Nearly all of us give grudging praise and admiration to our contemporaries, and would in fact deny it to them, were it not for the selfish reason mentioned. It is imperative that we declare a sufficiently large number of people great. Who that is, matters relatively little. We certainly cannot be bothered with the modest or retiring; there are plenty who talk loud and demand recognition. So it is that group whom we elevate and admire.

Let us add one more thought. There is really nothing wrong

about this elevation, nothing wrong from a human standpoint. Those who are ambitious and work intently all their life to achieve their goals, deserve some sort of recognition. If they are satisfied with that of their contemporaries, why deny them the pleasure? We object, however, to this process of dilution when we come to analyze genius from a phenomenological standpoint. It is then necessary to restrict the concept. Let them who want it badly enough have all the recognition; we, for the purpose of this discussion, must clearly distinguish them from the great.

17 GENIUS AS EMPLOYE

There is one point in the foregoing chapters that needs elaboration. It is the curious and rather unhappy relation between the genius and his master, or, let us say, employer. I mean here a regular employment for which he is paid.

There have been lucky ones among the great who went through life without ever having been employed. Many of them, however, either sought employment or actually needed it. To make a living purely from scientific or artistic activity has always been a problem, in all ages, including ours. This is likely to change sometime in the future; we cannot tell for certain. In earlier times geniuses were often employed by rulers, Popes, or the aristocracy; they often drew regular salaries. Nowadays the most frequent employment is at a university or art academy, where they have teaching duties.

In some cases this employment works smoothly, without friction, but in the majority it is a thorny affair. The reasons have been partly explained in the previous chapters, so a short discussion will suffice.

In the first place a genius is interested only in his own creative work; everything else is a burden. Now, the work required in these employments is often of a nature different from his own, as is easily understandable. One of the most frequent duties, as was mentioned, is teaching, and that is certainly not a creative occupation, at any rate not what the man is after, even if devoted and enthusiastic teachers look at the forming of a youth's mind as creative work. Quite often, teaching is hard and tedious, requiring time and patience, not leaving sufficient time and energy for producing original works of art or science.

A true genius cannot be prevented from doing what he is destined to accomplish, not by any amount of extraneous duty.

Still, this will interfere with his intentions, will slow him down, and promote an atmosphere, a state of mind not conducive to happiness. Happiness, as has been pointed out, is rarely the lot of a genius, and the friction mentioned is one of the frequent causes.

While often the man is in need of the money he earns from his employer, this is not always so. Sometimes the position is high enough to satisfy the man's vanity, and he actually would not want to part with it. Exceptionally, such a position may be satisfactory, outwardly at least, as with Goethe, when he was minister at the court of Weimar. Often such positions lead to open clashes, as in the case of Voltaire at the court of Frederick the Great.

Cases, where the man is pleased with his position and would like, against odds, to keep it, are particularly instructive. He tries his best to satisfy his employer, yet he does not really know how to go about it. The worldly matters he becomes involved in are strange to him; neither is he practical enough, nor diplomatic enough to carry out the assignment to full satisfaction, even with the best intentions. When he thinks he was doing his best, he finds the prince whom he serves far from pleased, and actually convinced that the man had not put his whole heart, his true ability into the task. Quite often the accusation is wrong, but the fact is that the employer had expected something different from what the man offered.

Intrigues do their bit to increase friction. Third parties that envy the man's position go to the extremes to make the employer suspicious, and weaken his good opinion of the man. Particularly in earlier times such intrigues were the rule, and the genius was always the victim of machinations.

A classical illustration of all these factors is the case of Benvenuto Cellini. Nearly all his life he was employed by rulers. He himself sought these employments because they provided a steady income in contrast to the possibilities open to an artist who was his own master. The favors and praises of the princes pleased, besides, his vanity. However, these positions were nothing but a source of continual trouble and danger; on a number of occasions he barely escaped with his life. Whether in the employment of

Pope Clement VII, Pope Paul III, the French King Francis I, or the various Dukes, he always led the same troubled life full of intrigues and obstacles hampering his artistic activities.

What the artist, as well as the scientist, needs in the first place is independence. Compulsion on the part of others, notably employers who have a right to exercise control over him are a burden. In Chapter 3 we discussed the curious compulsion from an invisible external source which seems to direct the genius's activities; this compulsion cannot be reconciled with one enforced by people. When the two oppose each other, life of the genius becomes a misery. Independence from everyday compulsion, from the often petty wishes of people who are in a position to pay is the most ardent wish of the genius.

Perhaps the future will show a change in this respect; perhaps this simple and elementary desire for independence will one day be recognized, and great men will be permitted to do what they themselves feel is best suited to them. This aim may not be easy to achieve. One of the difficulties is the circumstance that it is hard to know in any particular case whether the man in question is a genius; it is certainly not possible to take his own word for it.

18 SEX LIFE

After having discussed the social life of the genius, the next topic is fairly obvious: it is his sex life. Writers and poets have felt inspired and entitled to air their view on the subject, and, of course, a vast material is scattered through the biographies and autobiographies of great men. The following is an attempt to present our own point of view.

Sex is a pivotal factor in the life of many geniuses, especially artists. This is true even for other people, so it is no wonder if the activity of the genius, a person in many ways more sensitive than the rest, depends to an appreciable extent upon the course and success of his love life. It may actually influence his output and the quality of his work, a matter of which little exact information is available at present.

To begin with, there are geniuses whose attitude toward women is not different from other people's; in that group there is no specific attitude in matters of sex characteristic of the man of genius. His behavior in that respect is of secondary importance.

Foremost among those who do not exhibit peculiar features in sex, at least not too striking ones, are scientific minds. Although we have excluded statesmen from our discourses, let us remark in parentheses that they too range with scientists in this respect. A scientist needs first of all an atmosphere of peace in order to achieve his aim, a collected and well-regulated life without excitement. In some ways a scientist's life may be called dull, even bourgeois in its daily regularity and slow progress. This regularity is reflected also in his sex life, which is mostly of the strict family pattern. He is basically monogamist, has children, and feels happy under those conditions.

Don't misunderstand me: I do not maintain that a scientist is an ideal husband, by no means. He needs the frame of a family

life, but he is not an ideal husband. Of course, the question is, what do we mean by an ideal husband. I am treading a little on slippery ground, inasmuch as American men as a rule cannot claim that title; that distinction belongs more to continental Europeans, and, I believe, to Orientals. In one simple phrase, an ideal husband must be husband and lover. A scientist is scarcely a good lover, and that holds probably more for a scientific genius. He is too preoccupied with his abstruse creations to be a lover. When he is a young man, he might; at a later age only under exceptional circumstances, for instance, if he happens to be very much in love with his wife, and the latter happens to retain her youthful charm.

So there you have the sex life of a scientific genius in a nutshell: a good family man, but not an ideal husband. This is the standard picture, with deviations here and there. Great scientists and philosophers sometimes stay bachelors. The unworldly nature and shyness of these men, coupled perhaps with an unattractive exterior, prevented them from finding a suitable mate. They develop into the typical bachelor, and find a peace that might exceed that of a family man, if they are not particularly bothered by physiological needs. A classical example of this type is Kant. Schopenhauer too was a bachelor, but it is questionable whether he was happy in that condition; his pessimistic philosophy may be attributed, partly at least, to his involuntary celibacy.

So much about the love life of scientific geniuses. Far more colorful is that of artists, for reasons that are rather obvious. Inventiveness, or inspiration was mentioned as one of the chief requisites of a genius. It makes a difference, however, in what field a man is active; clearly, the source of his inspiration depends on his field of activity. An artist's work is more or less interwoven with the concerns of love; love, therefore, is one of his sources of inspiration.

A source of inspiration has a twofold significance. It can be taken literally, meaning a source from which he collects his topic, the actual material for his work. It may also be taken in a higher, spiritual sense, meaning a source that provides the proper atmosphere for creative work. The contact with women is a fundamental source of such an atmosphere. Even people entirely void of

geniality, when young and in love, are led to write love poems: such is the power of love. Particularly ascending love has this power, stationary love not to that extent, and descending love not at all. This has curious consequences.

Let us look closer at this situation with regard to ascending and descending loves. While love flourishes and grows, man's enthusiasm and joy also flourishes. In a genius this state is a powerful stimulus for creative work. When love is waning, either by disappointment or by surfeit, gloom results; in a genius such a condition is not likely to act as stimulus.

There is more behind this, a factor of physiological nature. With the chemistry of the matter partly well established, there is every evidence for a hormonal activity of the testes, a positive activation of the brain. This influence is general, found in every individual; in a genius, it is of greater importance, since the activity it promotes is at an incomparably higher level than in others. Sexual satisfaction, resulting in a low level of testicular hormone, has exactly the opposite effect; it depresses the activity of the brain, so we might call the effect negative activation. This again is equally general, and of greatest consequence in the genius. The physiological effects mentioned are intimately connected with the two states of love, those we called ascending and descending.

As a rule, love is in the increase before consummation, and positive hormonal activity accompanies that stage. As a corollary, love decreases after consummation with accompanying negative activation. I said, as a rule, because love may increase after intimacy, quite definitely so when deeply rooted; such cases are not too frequent.

What course will an artistic genius take in this somewhat exacting situation? He needs love as a stimulus, and, for the sake of his creative activity, he must keep his love always on the increase — a nearly impossible demand.

One way of dealing with the situation is the obvious one of letting a love affair come to consummation, and dropping it when the negative period sets in. Repeated cycles of this kind, especially without formal marriage, are considered unethical in the bourgeois

world; for an artistically active genius the method may be essential, and its condemnation would be illogical. Heine was probably an artist of this kind, and, *mutatis mutandis*, George Sand. A word of caution is in order, however. Biographies do not always give correct information about love life, and, because of possible insincerity on the part of the artist, conclusion from art products may not be always reliable. Judging from Heine's lyric poems, he must have followed the method outlined, yet, as I said, this cannot be maintained with certainty. His reference to his many romances might be *licentia poetica*, not unlike incorrect spelling for the sake of rhyme.

A more sophisticated variety of love in cycles is the kind in which the artist abandons his object before consummation: it is an elevated form of the simple *coitus interruptus*. Accordingly, there is a slightly pathological tint in this technique, at least, by the standards of the average man; for the artist it is a proficient way of avoiding the conflict mentioned above. Goethe is one who carried it through with great success and regularity, in keeping with the regularity he displayed in all other aspects of life.

Both ways described permit the artist to draw from continually recurring sources of inspiration. The interim periods, while providing opportunity for renewed search, are simultaneously beneficial times of relaxation during which the artist can spend more time on work, executing the projects for which he collected material during the previous period of soaring and enthusiasm.

Not all artists are in equal need of this type of inspiration. Those who need it most are poets and painters: it is these two who require the feminine as a subject, a material for their work: for the lyric poet, love and women are one of the chief subjects, and the painter needs women for his models. The close contact resulting from these needs is hardly thinkable without the development of romantic affairs, hence what has been said refers largely to these two. A musician needs women to a lesser degree, a writer still less, for this type of inspiration. The boundaries we are talking about in this connection are a help to understand the complexities involved, in reality they are fluid. As in the whole field relating to genius, there are no rigorously valid statements; it is our

inability to understand him that makes us set up approximate formulations.

A married artist appears in the light of what was said an unexpected phenomenon, particularly among poets and painters. Yet many were married. And many had a happy marriage; let us mention Rembrandt, Wagner and Schumann. Especially marriages at an advanced age were often successful, such as that of Goethe. Often, because of the early death of the man, it is not possible to draw a clear conclusion as to the success of the marriage. Ady and Petőfi died very soon after they had married.

An unsuccessful marriage of a genius is in no way surprising, and there are many records of these. First, there is the danger of the negative phase I mentioned. Second, even if love for his wife should persist, he finds himself lacking new impetus, new inspiration, a situation which for some is quite unbearable. Third, the necessarily restricted conditions of family life are often incompatible with the freedom of movement imperative for many artists. Travel, moving from place to place forms an elementary requirement in the career of certain artists. It is obvious, for instance, that Shakespeare, a playwright and actor, could not simply stay in Stratford with his wife; an ideal marriage was not possible under the circumstances, even if it was not as disastrous as Stephen Dedalus pictures it. Gauguin's artistic impetuosity carried him to Tahiti, far from his family, here again disrupting of what in bourgeois terms is meant by a good marriage. Mozart, while basically fond of his wife, was too much in love with women generally — and no wonder, considering the character of his music; as a result, many disagreements and quarrels disfigured an otherwise successful married life. There are marriages of geniuses which seem quite grotesque. Such was the marriage of Rainer Maria Rilke. He had a wife somewhere, but he spent all his life in the chateaux of various admiring females, and his intercourse with them, chiefly spiritual, was the basic milieu in which his unique artistic and philosophical output was fostered.

However unconventional these features are, they are dwarfed by another, not too infrequently encountered among geniuses. Since the latter form a sort of abnormality of the human species,

occurrence of abnormal features of the sex life is in character with their general behavior. This is perhaps one of the reasons that the relative incidence of homosexuality is higher in that class than in the average. I must admit that I have no statistical figures; it is possible that the difference in occurrence is an apparent one only. Intensive study of the genius, of his work and his biography reveals that oddity, whereas it may pass unnoticed in other people. Let us accept, however, the correctness of the observation. The explanation suggested: a pathological sex deviation in an altogether abnormal individual, does not seem entirely satisfactory. Let us look for other possible explanations.

A classical example is Socrates, although not a luckily chosen one because of the general acceptance of the habit among the old Greeks; it was certainly not regarded as pathological. Yet Socrates is a good example, since he furnishes a key to the understanding of the phenomenon. For a man of exceptional mental powers it may be that women are not an adequate spiritual company. They have only limited interest in philosophy, logic, mathematics, and similar disciplines; their interest is often centered around the practical aspects of life: in the maintenance of living standards, and in the upbringing of children. A philosophically minded man, especially a true genius, may find it difficult to exchange his ideas with a woman and to receive the expected impetus for further work from a conversation with her. A man with such exacting mentality will look rather for men for that purpose, and particularly young men who are receptive to new ideas, yet not famous enough to constitute a rival. Spiritual intercourse with able and talented young men will satisfy him best. From there it is only one step, and perhaps not an unexpected one, to a deflection of that spirituality toward more bodily inclinations. All the assertions of Socrates to the contrary cannot really convince the reader that in his teaching career he had always kept to the spiritual course.

This spiritual kinship, this search of a genius for a highly talented youth is one of the driving motives. In certain cases the extent of friendship remains dark: traditional sonnets, such as those of Michelangelo to Tommaso Cavalieri, or of Shakespeare to the Earl of Southampton do not permit a clear diagnosis. Other

instances are more obvious, such as the friendship between Verlaine and Rimbaud: the ties were strong enough to overthrow Verlaine's love for his beloved Mathilde whom he had married the year before.

There may be other causes. The Greek sculptors maintained that the male body was superior in beauty to the female. No wonder then that a genius in whom the mental concept of beauty dominates over the natural instincts is led to choose a partner of ideal beauty in preference to one of second rate. The opposite argument may be also operative. A woman of high mental qualities might be convinced of the superiority of the female to the male body. She would then scorn the love of the opposite sex, and accept it as a substitute at best. The Greek poetess Sappho chose her lovers from among her many feminine admirers and followers. The spiritual motive in such instances may be seen in Verlaine's remarkable sequence *Les Amies:* himself a friend of the poet Rimbaud, he fully understood feminine homosexuality, an aberration based on the superlative appreciation of a woman for the beauties, similar to her own, of another.

These motivations may appear complex; since we are concerned with an anomaly in a genius, it loses its relative simplicity and becomes entangled in the mental processes of which we pictured a few. Imagination too plays its part. The role and importance of the latter in a genius was emphasized in Chapter 6; yet it has implications not only with regard to the work, but also to life. Imagination can carry him away into wildernesses into which a "decent" bourgeois would never venture. Love in the usual sense might not satisfy him because his imagination points at ways more exotic and more exciting. Not being encumbered by conventions, he is ready to follow those ways, one of which leads him precisely into the maze under scrutiny. The nearly limitless fancies of his imagination can be assessed from the explications of Proust on this matter in his *A la recherche du temps perdu:* not an outsider, he tries to disentangle the psychology of the phenomenon, thereby showing to what extremes the imagination of a genius can go in a field that could perhaps be described as well in a few plain medical terms, at least until we are in possession of its biochemical basis.

19 AGE

We have talked of the ways a genius lives, of his relation to his fellow creatures and to women. We referred to this part of our discussion as a general biography of a genius. We must then turn to a topic sweet and bitter, joyous and sad at the same time — I mean about aging. I am sure, the topic is of interest in any person's life, not only to the genius. We are vitally influenced by the various phases of age in our lives. While age for the average person is merely of private concern, for the great it is a matter that in the long run affects humanity as a whole.

Youth is the period of a genius's most concentrated activity. The external constraint, mentioned several times, is particularly effective at that period. A genius is scarcely past a child's age when he begins to create. At that age there can be no conscious planning, at least not in the usual sense. There is planning, to be sure, but not in the orderly way we associate with the word, rather in a vague, nebulous manner. A child's "planning" — is it really more than a dream? All children dream, it is their privilege, and it is not easy, in contemplating that tender age, to keep child's dream and genius's dream apart. We talk here of a true genius, of course. We know also a false, apparent form of this phenomenon, and in Chapter 23 we shall discuss what I would call a child genius in quotation marks.

A true genius feels vaguely that he is destined to accomplish something great. The torture begins at an early age. He feels joy and anxiety at the same time, he has a presentiment that his life will not be plain work as it is for most people. The angel's voice, reminding him of his duty, and admonishing him to be wary of the many obstacles in his future life, rings in his ears. In one sense, he sees his path clearly ahead of him, in another, he is bewildered and does not know how to go about his duties.

The matter is aggravated by the voices and actions of parents and well-meaning relatives, notably short-sighted uncles. They do not hear the angel and consider the wishes and inclinations of the young man unrealistic and unprofitable; they often force him to take steps in direct contradiction to his calling. Accountancy or law are the most frequent paths into which in their ignorance they direct the young man, not realizing the agonies they by this means add to his portion allotted by nature. It usually takes some time, perhaps years, until he finally leaves those unwanted avenues and turns into his own.

There is occasionally a lucky young man of understanding and cultured parents who recognize his gifts and promote his development. Mozart was one of these lucky ones; his father did everything he could to develop his talents. If the family, in addition, is reasonably well-to-do, the young man has an enviable time both spiritually and materially. While these advantages are by no means necessary for a true genius, they have undeniably beneficial effects, as may be seen from the childhood of such men as Goethe and Mendelssohn. Educated and cultured parents are an asset that bears its fruit even in the case of a genius. It is interesting to ponder whether such environment during childhood might not under circumstances give a particular direction to the unfolding future of the young man. In the three cases mentioned there is in common a certain happiness and serenity of both the ripe man and his work. Although this is largely due to innate factors, it may be that upbringing too played its role. It is thinkable that unbridled and wild geniuses did not enjoy the sheltered and cultured childhood of those whose work is characterized by serenity.

Besides short-sighted parents other obstacles lie ahead. He is unknown yet, and quite naturally meets opposition from rivals and critics who either do not understand him, or do not want to understand him. The opponents cannot be blamed altogether, for there are too many young aspirants, and to distinguish the real from the seeming great is a task that is practically unmanageable. The opposition of older rivals is tragic, but only too human and excusable; we mentioned it in discussing character traits. It is the

eternal conflict between the old and young, the arrived and the aspiring.

The young genius needs great self-confidence to overcome the opposition; he does not always have it and may be shaken in his predestination. All this is the lot of the young man. The voice of the angel must be clear and insistent, indeed, if it should help him during that period.

In this connection we might ask whether there are geniuses whose development stops at an early stage. If so, it must be exceptional. It actually implies a contradiction, since a genius who suddenly stops to be one can hardly be a genius. It is not easy to comprehend how the supernatural gift with which he is endowed should leave him, except for old age or mental derangement. For a young and healthy man such occurrence is scarcely thinkable. And, indeed, if such cases should exist, they may be due to pathological causes, even if such are not apparent on the surface. One such case comes to my mind, that of Arthur Rimbaud. The genius of the young poet cannot be doubted; despite his slim output, both his poetry and prose are among the finest of the period. At an early age he went to Africa where he engaged in commercial pursuits, and his activity as a poet came to an end. His is certainly a freak case, but it shows that an abrupt stoppage in the development of a genius is, in principle at least, possible. We might call such an unfortunate a come-down genius in the true sense of the word.

The young struggling genius faces yet other perils, more of an objective, than of a personal nature. He senses the direction in which the voice tells him to go, but his experience and education lie, of course, in the immediate past and pull him backward. In spite of his youth, he is not unbiased. There is a conflict between his progressive urge and his conservative education. A young genius in his first years is scarcely ever his own self, he is too much influenced by his immediate predecessors. The greater his genius, the faster will he shake off that influence and display his originality.

The value of the early work varies with the temperament of the man. Some, perhaps the majority, show an extraordinary vitality, and the early work is of a brilliancy not surpassed by later ones. In later years the genius himself wonders how he was able to produce

a work of such genuine exuberance. With poets in particular, the early work is of a charm characteristic of youth and reveals unbounded vitality. Theoretical scientists also produce their best at an early age. In contrast, there are others who develop slower, and with whom it takes years until their real greatness breaks through. Such is the case when experience is important for the creative act.

With this thought in mind, we have arrived at the middle age of a genius. As with other people too, this period brings forth the best, if not the most brilliant work. The period is characterized and dominated by the fact that, often at least, the position of the man being settled to a certain degree, he does not need to fight as violently as in the early years. The originality, the individual way is now established and he is free to follow it without having to fear opposition. He can now create with authority.

With this gain in authority and some peace of mind there goes a loss, that of youthful impetuosity. It is interesting to study this change in lyric poets. While the early work is mainly of love, the natural subject of a young man, the poems of later years become more settled, more sophisticated, dealing often with nature and the varied reactions it inspires in the soul of the poet. A similar change is found in the works of all great men, only not so obvious. This is the happiest time in their lives. Inspiration flows abundantly, and with the experience gained through the years, execution of the projects comes easily. The output is substantial, and the accompanying strain scarcely noticeable. Whatever the credit and honor, they are received gracefully and happily, with the knowledge that they are fully deserved. If credit comes only grudgingly, he is not too disturbed; he feels with confidence that missing acknowledgment will follow in later years or at least after his death.

Those later years! For most great men they are fraught with much sadness. The worst is the feeling that inspiration is flowing less and less copiously. This is natural. Even the greatest have only so much to say; when all is said and done, the mission is accomplished. A painter is relatively well off, he can do the same kind of landscape again and again, inspiration for a theme plays only a minor role. A composer and a writer are badly off. Some accept the fact and reduce their output. I talked about this in another

connection in Chapter 8. Others don't give in so easily; they continue their work despite the danger of becoming repetitious.

There is another matter. The technique they have acquired in the course of years becomes very much patterned. Except for the very great there is the danger of the technique becoming somewhat stale, even if new subject matter is found. The late operas of Strauss are poor copies of his early masterpieces. Often critics will not mention this, especially if the man has acquired a fame. Yet he himself knows, and this is nearly as bad as having others tell him so. Much pain and trouble is hidden in the late years of a genius. Some are spared all this, either by early death, or by a nearly inexhaustible well. Happiest are those who continue developing into new directions. These are the eternally young; we admire this remarkable feature, quite astounding with Beethoven, in a few. They continue to grow, and give the impression that even an age of Methuselah could not harm them. Some even stay young to the extent of working on subjects befitting only young men: a curious discrepancy arises, and only the timeless grace of the work saves it from an aspect of ridicule.

I have mentioned the lyric poet as well suited for a study of the influence of age on creative work. His verses become still more serious as he grows older. He is becoming very sophisticated, perhaps too much so, the originally buoyant bard of love pens now little philosophical essays in rhymes, and the tone of the essays is not only serious but melancholy, full of the foreboding of death, and often of a religious flavor. Except for the fact that lyric poets not often reach an old age, the trend I have pictured is typical.

Lastly, one further tragedy of the genius's old age is the changing world around him. When young, they were the ones who insisted on changing the world. Slowly, they succeeded, and established a direction that had slumbered in their budding minds. But the world changes at a frightening pace. Within half a century they who had been revolutionaries gradually become conservatives. To their dismay a new genius appears, with new ideas and new techniques, threatening the very life of the system they had built with their heart's blood. No wonder that they feel hostile toward the new man; this hostility, also mentioned earlier, can be traced in

the lives of many great men, whether in science, arts, or other fields. Bitterly they recall the days of their own youth, when they failed to gain the understanding and support of the accepted great of the times. They failed because those great were not broad-minded enough to see the value of their youthful creations; at least that is the way they themselves explained the controversy at the time. And now—they find themselves in the same situation, except on the other side of the fence. Now they cannot help being just as narrow-minded as the old great were in their youth. Now, of course, they do not call it narrow-mindedness, they call it bitter necessity to defend the existence of their lifework against the revolutionary young genius. The cycle begins anew, and the young will have to go through the same phases of struggles, joys and sorrows that lined the road of the old.

20 ILLNESS

This appears to be the right place to insert a brief discussion on the connection between genius and health, meaning good health and bad health. From the standpoint of medicine and also because of its artistic interest the question is certainly fascinating.

I might formulate our question something like this: is good health or bad health more conducive to great achievements? Offhand the answer seems obvious, but, as some of you might have guessed, the situation is not quite so simple. The answer hinges on what we consider great achievement.

One kind is concerned with immediate returns, the other is for posterity. The first involves mainly statesmen, military leaders, and famous businessmen. It was pointed out that, however great their achievements in the eye of the world, the very fact that they have immediate and often selfish benefits in mind, and that, as a result, their accomplishments are mostly of a relatively short duration, they are below the level of the other group, working for posterity. While this group does not concern us directly, let us remark in passing that these men thrive on good health, and that, if the answer to our question seemed obvious, we were thinking mainly of that group. The founder of a large concern, or the prime minister of a big country will not achieve much if he is handicapped by illness.

Let us then turn to the second group, the geniuses in the restricted sense of the word. Here the answer will depend again on the kind we consider. In general, a scientist needs good health, particularly if he is engaged in experimental or manual techniques. To be sure, there have been great scientists with a poor health record, but their number is not overwhelming. The mathematician Riemann died of tuberculosis at the age of thirty-nine, and Pascal suffered from chronic dyspepsia and insomnia all his life. In general,

there is a certain sobriety associated with the calling of a scientist, and the genius is no exception. The very greatest are known to have lived quiet, moderate, uneventful lives, and good health often goes along with such habits.

The picture changes radically for artists. Purely statistically, a large incidence of illness is found in the lives of great artist; bad health is quite frequent in that group, at least it has been up to the present. Whether this situation is going to be modified in the future, is uncertain.

Great artistic genius and illness do not necessarily go together; my statement should not be misunderstood in that way. In fact, there were many in excellent health besides the many in poor health.

To begin with, an artist does not live the sedate life of a scientist; just as a regulated life is automatically connected with the work in libraries, laboratories and operating rooms, an irregular, often nocturnal, turbulent way of life, abuse of nicotine, alcohol and other stimulants, sexual excesses are in a sense a natural accompaniment of an artist's life. As was pointed out in the previous chapter, sex is one of the main sources of an artist's inspiration. All this is not conducive to good health, so that the incidence of illness is a natural consequence.

There is a characteristic difference between geniuses in good health and those in bad health. The first may be called classical: they create a serious, dignified work of a serene stamp which reflects the creator's own outlook on life. While not generally valid, the rule is often verified. Goethe is a typical example, Leonardo da Vinci another, in the field of music perhaps Saint-Saëns.

In contrast, a sick genius is of a romantic type; his work is wild and tumultuous, again reflecting the man's own outlook on life. Such a man has a naturally troubled disposition, his bodily sufferings would not harmonize with the serenity of the classical artist. Here again we find exceptions: in some cases illness manifested itself only at a later age, in others it might have been intermittent, leaving periods of repose and relaxation, again in others the genius's iron will might have conquered his bodily sufferings. There is

infinite varity here, offering wealth of material for the medical student as well as the psychologist.

The examples I wish to quote might not be new to you; in fact, they are partly well known. Yet they often haunt me as sufferers contributing not a little to the weird mystery surrounding the problem of the man of genius. The impression that bad health lent a helping hand to these men to achieve what they did cannot be suppressed.

In the past tuberculosis has been frequently encountered in geniuses. Of course, its general incidence was so great that is is not surprising to find many of its victims among the great. I am not in possession of statistical figures to show whether its occurrence among the great was the same as that in the mediocre or larger. Tuberculosis has been called the poets' illness. Let me mention Keats, Schiller and Molière as examples. Among musicians Chopin is a well-known case. It is certain that in the future there will be much less tuberculosis; whether this circumstance will reduce the number of great poets and musicians, remains to be seen.

With syphilis the situation is similar, it being one of the illnesses in the decrease. Heine and Schubert were afflicted with the disease. Proust suffered from a serious case of *asthma bronchiale* which caused his early death. From among other organic illnesses heart condition may be mentioned—Mendelssohn, who was afflicted on a hereditary basis, died of it. The autopsy of Beethoven revealed advanced cirrhosis of the liver. Swift suffered from a chronic ear trouble and recurrent attacks of giddiness. Dostoyevsky was epileptic.

Chronic alcoholism must have been a frequent condition of geniuses in the past, and, if it can be assumed that it promotes creative activity, we may feel reassured that geniuses will not be altogether extinct in the future. Poe, E. T. A. Hoffmann, van Gogh and Toulouse-Lautrec belong to the illustrious list. Baudelaire was a hashish-smoker.

These are only excerpts from a long list. We have hinted at the possible increased incidence of illness owing to the way of living of the genius. Is there also a causality between illness and creative activity, the former promoting the latter? This is, of course, the

crucial problem. I am inclined to answer the question in the affirmative. I can think of three possible factors that might contribute to the solution of the question.

One is a rather general consideration. It has been pointed out before that a genius is altogether an abnormal specimen of our species, abnormal not in the derogatory sense, rather in his excessive deviation to the higher from the standard. It cannot be too surprising that such an individual should show also other signs of abnormality. The pathological condition manifesting itself in illness is just another abnormality, rounding off the frame within which creation becomes possible. If creation is conditioned by abnormality of the organism, then illness belongs to the characteristics of genius.

The second aspect is more restricted, and rests on practical considerations. Stimulus to creative work is gathered in turmoil, but execution of the work needs rest and a collected frame of mind. Some have the necessary will power to let the two alternate: they let seclusion follow debauchery and provide the calmness necessary for writing, painting or composing. There are even scientists who work in this fashion: the Hungarian chemist Louis Winkler spent many a night in a coffeehouse only to retire to his laboratory at dawn and carry out his researches in peaceful solitude. Others do not have this self-discipline. A period of illness comes then as a godsend.

The quiet hours spent in bed are beneficial for creative work. Not only do they provide the leisure and the absence of all disturbing influences, but the realization of illness produces a feeling of resignation which is one of the factors of creative activity: it is the notion that by a *vis major*, so-to-speak, he has been cut off the tumult, haste and greed of the world, that he does not really belong to the active and busy daily life, but is destined to live apart in solitude. This knowledge produces a powerful incentive for the sick man to create, in compensation for his seclusion, something that does not belong to daily life, rather to the realm of beauty to be appreciated by future generations.

Lastly we have a factor in the field of chemistry. Illnesses, especially those of bacterial or virus origin, but also others, are

associated with toxic substances which are known to act as stimulants to the brain, as do alcohol and other narcotics during the first phase of their action. While the result of this stimulation is merely of the nature of excitation and wild dreams in the average human being, it is quite likely to be different with the genius. We know for certain that fantastic writers such as Poe and Hoffmann created much of their work under the toxic influence of alcohol. By analogy, a similar influence is probably exerted quite generally by toxic substances of bacterial or hormonal origin. This is a fertile field for future research into the problem of genius. With his wonted perspicacity, Thomas Mann exposes his hero Leverkühn to luetic infection in order to explain his soaring to genial heights before his final collapse.

Generally, inspired ideas may originate from a period of acute illness accompanied by fever. Think of a writer or scientist. During the feverish unrest our man may be busily engaged in composing an aria in his imagination, although he has not composed a single bar in all his life. Now it seems to come easily, he has no difficulties in inventing melodies. While thus engaged, actually semiconsciously, a sudden idea flashes through his mind: a plan to a literary or scientific work. The idea alternates with the strains of the aria; while the latter evaporates into blue mist when the crisis comes, the idea, the germ of his next work, remains.

Experiments concerning the relation between toxic effects in illnesses and creative activity will not be easy. It is scarcely possible, as in so many other studies, to use animals for the purpose. Yet it is certain—biochemistry is destined to solve this particular problem regarding genius. The coming of a very sick genius might be necessary for a good start.

21 INSANITY

There is a particular subject we have not touched upon that deserves consideration. It is the relation between genius and insanity, a subject that attracted attention in the past (Lombroso).

The first notion of an unbiased observer that such a relation might exist stems from his reading or contemplating the work of certain geniuses. Certain, I say, and I might add, a few. It must strike any one who reads Dickens that some of his characters are excessively odd. Not only that they are improbably good or bad, they are eccentric. Think of Jingle or Micawber! One wonders how the author could possess the imagination to picture peculiar quasi-pathological characters of that kind. Or think of many of Picasso's paintings, the *Minotauromachia* or the *Guernica*, to mention typical examples. Whatever one's opinion of modern art, there is more in these works than mere modernity that impresses the observer: a strange conglomeration of incoherent beings, beasts and humans, in bizarre positions, shown performing enigmatic actions, all this full of curious sensual implications, resulting, independently of the picture's artistic value, in an impression of sheer lunacy. One is led to the same conclusion, by the way, in contemplating some of the old masters, such as the triptych, *The Garden of Lust*, by Hieronymus Bosch.

Other literary products similarly impress the reader; studying writings of Nietzsche, or, to take an example from fantastic fiction, of E. A. Poe, one wonders whether their originators were actually sane or not. In poetry such impressions are not infrequent, the delightful poems of Christian Morgenstern not only abound in humor, but are at the same time close to being crazy.

These instances indicate that the genius bears some relation to insanity, otherwise it could not be explained by what means he is able to genuinely produce works of a distinctly abnormal

character. The word abnormal in this connection does not only imply a simple deviation from normality, but rather an intimate relation to the mentally abnormal in the medical sense. This, as I said, is our first impression. Is there anything more behind it, or is the notion deceptive?

It has been pointed out previously that the genius himself, independently of his work, is looked upon askant by others because of his strongly abnormal characteristics. The average person senses, and his instinct is quite right, that the man he has come in contact with is basically different from him, different in all mental characteristics. Not many are in the lucky position to make such observations, we less fortunate ones have to content ourselves with biographies and letters.

That difference in the direction of abnormality can go as far as to assume schizophrenic features. A genius is possessed by the ideas he is destined to develop and to express; his mind is often wholly occupied with them so that he is not accessible to the influence of daily life which constantly affects others. All his thoughts lead into that channel to which he must devote his life.

There may be times when his mind relaxes, and is free to receive the common impressions of daily life; a person conversing with him at such moments might find him perfectly normal. Here we note the split personality characteristic of paranoiac patients. To be sure, the personality of the genius is only remotely reminiscent of the clinical picture, and it does not degenerate to the extreme where reason loses its control. One might say, it is a difference in degree, not in essence.

The imagination of a schizophrenic patient surprises the observer; it appears more reasonable if allowance is made for his detachment from the outside world. No healthy person would ever use the cuff of his coat as a spittoon; only a schizophrenic who closes his eyes to the outside world can discover a similarity between a cuff and a spittoon, and hit upon the somber practicality of using the former to save himself a walk to the lavatory. However, imagination and inventiveness were quoted as the most important expedient of a genius for creative work; he, too, would be unable to make full use of the ability if he were closely watch-

ing the outside world and the people populating it because, watching all the conventionalities, he would not hit upon the unusual so essential for true creation.

There exist only fragmentary attempts of correlating biochemistry with the schizophrenia, such as assuming a disturbance of the function in the brain of a substance called serotonin.

Lacking knowledge of the chemical and hormonal causes of paranoia, we often consider frustration a causative element. Many patients are known to have suffered disappointments, real or imaginary, which nurtured and strengthened their belief that they were failures and outcasts in this world; the process by gradual intensification then developed into the full disease.

A similar basic outlook is sometimes found in geniuses, as was mentioned before. It is often unfounded, as also with patients. In other instances it rests on early failures and on insufficient recognition by the accepted great or by critics. This feeling of frustration can assume large proportions in young geniuses. The paranoiac character of the outlook is obvious; fortunately the result is basically different, leading to intensified creation instead of the asylum.

Of interest in this matter is a parallel of the relation as described. What I mean is this. Schizophrenic temperament is fairly widely spread among healthy persons, it is a particular kind of outlook and behavior, found in various degrees of development. In some it is just noticeable, in others it may be so strong that relatives and friends sometimes wonder whether the man ought to be free. All of us know such people. It is a common experience that this temperament is scarcely ever found among intellectually insignificant persons; it appears frequently in the interesting and talented.

The type is not uncommon, and easily diagnosed among one's acquaintance. They are mostly different from the rest, show some special ability, and are, as a rule, not easy to get along with. They are strong-minded, although sometimes outwardly soft; more often unpleasant than pleasant companions. The medical man will have no trouble to find schizophrenic traits in them, and it needs only a general understanding of human nature to recognize in

them certain rudimentary traits of genius such as we have discussed.

The close relation between genius and schizophrenia is not only a matter of superficial similarity, such as might result from a vivid description of the genius's character. This may be seen from a consideration of another frequent psychosis, the manic-depressive type. Except for entirely superficial resemblances, no significant similarity of its symptoms with the traits of a genius can be found.

In establishing the relations mentioned, one can go one step farther. Here we tread on more dangerous ground, and only a rigorous analysis, combined with statistical data could tell where the truth lies. We refer to the actual occurrence of mental disturbances in the life history of geniuses. Indeed, if the relation surmised up to this point is realistic, one should expect such an occurrence to be more frequent among geniuses than among others. If the constitution is schizophrenic, then further disturbances during life and other possible metabolic causes might lead to the development of the clinical case.

Examples are known: some seem natural, considering the man's character and type of work, others are not obvious, but not less instructive.

While not considered generally as insanity, suicide may be looked upon as a sign of insane disposition. There are motives which more or less justify it even in a normal individual, such as a major crime committed or incurable disease. It is not these we are concerned with. The causes of suicide for the genius are mostly frustration, serious disappointment or an overexalted disposition, causes that, judged calmly and objectively, would not justify the act. It is correct, therefore, to consider these cases under the general heading of insanity. Purely medically, I would say, the situation is not yet clarified—a statement nearly tautological, for what is perfectly clear in medicine? From a practical angle no situation for which improvement is possible justifies the act; if it is still committed, then it must be in a state of derangement.

The case of Otto Weininger was mentioned in another con-

nection: the bad reviews his work received were certainly no stringent reason. Kleist too committed suicide because his work did not receive the appreciation he had hoped for: also an act of insanity. There are also the instances of semi-suicide, the man exposing himself to situations involving a nearly certain death. Such was the fate of Byron out of an unrestrained temperament.

Let us now turn to clinical cases.

I mentioned Nietzsche's writings which, irrespective of their high literary value, are extravagant and strongly emotional to such a degree that some of his essays appear to have been composed by a poet. His emotions carried him away; when writing for a particular cause, as in his *Antichrist* against religion, or in others against Wagner, he was positively possessed by his animosity and his intention to annihilate his opponent, for which purpose he did not hesitate to use the strongest language at his disposal. The writings against Wagner are the more amazing as in his earlier essays he shows himself as Wagner's greatest admirer: a rather typical case of divided mentality. It appears nearly compelling that such a personality should ripen to a mental patient, justifying our assumption that he always had been the paranoiac type. There exists, by the way, the possibility that his insanity was progressive paralysis, in which case his excessive emotionality may be traced to the toxic influence of *Treponema pallidum* much before the outbreak of the illness, as explained in Chapter 20.

Take the case of van Gogh. Both by his biography and a study of his exaggeratedly bold technique we are led to the conclusion that he was mentally anomalous, and the assumption appears to be verified by his insanity toward the end of his life.

Hölderlin's case is more difficult to analyze, since his literary output is relatively small. His *Hyperion* is certainly one of the most exalted works I have come across; this character of his work may be partly explainable by the romantic tendencies of his time. There are works of contemporaries which are similar in character. He was not appreciated in his time and was openly rebuffed by Schiller. He had reason to be frustrated and this circumstance

might have aggravated his possibly paranoiac disposition which finally at an early age broke out in the disease.

Schumann is one of those geniuses with whom the tragic event was not to be expected, and precisely for that reason his case is instructive. Among composers he deserves the designation genius more than many others. His work is fascinating and enigmatic in many ways; his cycle *Kreisleriana* shows his genuine understanding of Hoffmann's weird and mysterious musician. The average music lover has no true appreciation of his music, and one might venture the statement that only an eccentric person can really appreciate his extravagantly romantic style. All this sounds like a post-mortem diagnosis which in a way it is: it has its advantages and drawbacks. It illuminates clearly that we know little about the subject and that we are forced to let our imagination roam where knowledge is missing.

IV

GENIUS AND HUMAN SPECIES

22 WOMAN GENIUS

While we have discussed the man of genius fairly exhaustively, there are a few matters left open. We better take these up now, before tackling the problem of the work of genius, which will round off our story. The matters we have in mind are not easily specified. From the first example we are going to present you will see what we mean. To give a rough heading to this section of our discussion, we might call it genius and the human species. Certain aspects, partly psychological, partly anthropological, that comes to mind when considering genius in relation to the biological unit, man, should form the subjects to follow.

The first topic is the question why practically all geniuses are men. How is it that no women are found in that illustrious group? I surmise some women readers will smile, a little indignantly, or disapprovingly, as if my statement were not entirely correct, or at least not fair.

In order to dispel misunderstanding, let us say that there have been in the past many famous and highly gifted women, but extremely few in whom many of our main criteria are found united, and who, according to our definition, may be called geniuses. The most productive field for women is literature. We clearly disregard those, who, like corresponding males, pursue writing as a money-making profession, and whose number is quite appreciable. There have been women writers in the past whose work has survived. The poetess Sappho was mentioned before; Marquise de Sévigné, George Sand, Elizabeth Browning may be added. Painting is a field in which very few women of note are known: let us mention Mary Cassatt and Käthe Kollwitz. Creative music is only exceptionally tried by women: the only one with reputation I have heard of is Chaminade. Science, particularly experimental science finds relatively many women cul-

tivators, and here we have among the great ones the classical example of Madame Curie, and among the recent ones Lise Meitner. As you can see, the list is not too impressive, although there are, of course, more names that could be added. The conclusion is inevitable: women are for some reason not suited to have united in them all those features that constitute the genius. The question is then, can we find reasons? The problem is not only of interest in itself, it has also more far-reaching consequences to be mentioned later in Chapter 24.

In pointing out the possible reasons, one appears to be the supposed inferiority of the mental faculties of women, compared with men. This statement is heard on occasion, and anthropologists find it verified in the different dimensions of male and female cranes and brains. The lack of female geniuses would then be a direct result of that difference.

It is hard to go along with the statement in that generality. As we shall see, it holds in certain restricted senses, but not generally. If you look around among your acquaintance, you will not observe a lesser intelligence in women as compared with men. As a matter of fact, a poor judgment, an accordingly great credulity, and a lack of understanding for cultural values is typical for the majority of people. Moreover, in all these respects there is very little difference between men and women.

Even granted that the difference exists, it could be only moderate, and might explain a lesser number of geniuses among women than among men. It could not explain the virtual nonexistence of female geniuses. This circumstance alone invalidates the argument. We have to look for others.

Women are known to be eminently practical, more so than men. They have an eye for the real needs of life, as was mentioned before in another connection. They take care of the house, of food and clothing, both for the husband and the family. I do not say that men in general are not practical; they have to be in order to make a living. Still, men are more leisurely, and curiously enough, not only in their leisurely pursuits, but also during work, they have more disposition for humor, jokes and games. They like to play and are closer to children in that sense than women.

This playing tendency, so clearly opposed to the realism of women, is one of the roots that, given all other necessary ingredients, leads in its final culmination to what we call a genius. This attitude of women, this rejection of anything fantastic and imaginary contributes to a certain extent to their exclusion from that lofty brotherhood.

There is another aspect. A woman's mind tends to the concrete, the easily visualizable. They do not appreciate generalization, abstraction. They see the specific, the matter at hand. Many men are like that too, but there are those who go beyond the specific. Generalized thinking is a masculine feature. We pointed out this difference in the discussion on sex.

Now, most works of genius are universal, requiring a universal mind for its creation. In scientific work this feature is paramount. A considerable ability of abstraction is needed only to comprehend the contents of some scientific books. This is the reason why a layman can never really understand a scientific discipline; even if he can grasp something specific, he will not follow the more abstract principles. If such a high degree of abstraction is needed only to understand the matter, how much more is required to create it. In philosophy abstraction forms the very program of endeavor. Even in the arts, especially in its highest manifestation, abstraction is often prevalent. Think of Beethoven's or Wagner's music, of great sculpture, as Rodin's, of the masterpieces of religious painting, as El Greco's: they express far more than is evident in the immediate contents; the specific product on closer study appears as a representant of a much wider, much more general concept. Woman's concrete mind is too far removed from such abstraction to be able to produce creations of this nature.

While the points mentioned solve part of the problem, perhaps still more significant is woman's chief destination, perpetuation of the human species. As in the animal world, man's share in this duty is secondary. This prime trust occupies much of woman's mind from earliest girlhood to late years, leaving little time and opportunity for so-called idle thoughts and occupation. As it happens, the genius's pursuit is essentially "idle," hence the true

woman, the true mother has a mentality incompatible with such kind of creative activity.

It is of interest to ponder possible changes in this attitude of woman. In the course of human history that attitude has not remained unchanged. The emancipation of women has gradually and slowly removed her, at least partially, from her highly sheltered position of earlier times. In this country today about one third of all women earn money by outside work, and other countries are probably not too different in that respect. Leaving alone the question whether such a situation is desirable or not, the fact remains, and the impression prevails that the working fraction will increase in the future. Socrates' utopistic idea of having women partake in the duties of the state, while children are brought up in educational centers might be realized in the future. This might have a bearing on our problem at hand in that a woman genius could arise in such a community with greater probability than today. In Chapter 24 we will come back to this matter.

Returning to the situation as it is found today, another thought may be added. In the second part of this essay, the urge for permanence was listed as one of the basic criterions of a genius. It was said that the majority of men satisfy that need by raising a family. A possibly large safety factor in this respect might be one of the reasons why some men crave five children or more. Clearly a woman whose more immediate duty it is to bring forth and raise children is easier satisfied than a man concerning desire for permanence. She will not find it necessary to look for other ways and means for immortality. Her more direct connection with her children and the joy associated with that connection make it quite obvious to her that she has been successful in preserving her and her husband's qualities for posterity. One of the mainsprings of creative activity is thus nonexistent in her.

A logical consequence of this exposition is the observation that nearly always highly gifted women, approaching in some degree the nature of a genius, are masculine. In certain instances we have proof of that masculinity, as in George Sand. Eminent women scientists are nearly always plain or have definitely masculine

features. They are actually half men, physically and mentally, their primary sexual organs happening to be female. If the expression, abnormal, in the best sense of the word is justified in connection with genius, it is with these women. Nature is playing here on borderline fields, producing unusual types, unusual in two ways.

23 APPARENT CHILD PRODIGY

Having discussed women, we now turn to the discussion of children, or, to be more specific, of child prodigies in quotation marks. In discussing these, we must touch on true child prodigies, and so must repeat certain things that have been mentioned before.

Many geniuses develop with an astounding rapidity and amaze the world with their productions in their childhood. It was pointed out severally that they grasp by instinct what other people have to learn by toil. Especially in poetry, one cannot marvel enough at the miracle. Some verses of great poets written at an early age contain reflections that seem to require the experience of adults, in the realm of love, for instance. These young boys are, of course, essentially imitating the works they saw or heard, if only once. Perspicacity in observation and perception, and a good memory distinguish them from the average child, and, to be sure, technical ability to reproduce what they have perceived; originality cannot be expected in these childhood creations.

One thing stands out as essential feature of the true child genius: however imitative his production, yet it is production. We should not lose sight of this fact, if we want to avoid confusion and disappointment, the lot of so many parents.

What is the chief characteristic of the apparent child prodigy? In most cases it is an unusual degree of smartness, not found in other children. They are excellent pupils, learn quickly, have a good memory. These abilities come remarkably close to what we have just outlined for the true genius. No wonder parents often jump to conclusions and call a smart child a genius.

Only a closer scrutiny can bring out the difference between the two, and in some cases this is by no means easy. The main difference is that, while the apparent prodigy is generally smart, the true one shows a more specialized ability. In fact, the latter

does not need to be smart, he is often an indifferent pupil. A boy who is particularly good on standard examinations, who has a high intelligence quotient, and is good at spelling is quite likely only an apparent prodigy. They are fine specimens of boys, and it would be wrong to look at them ironically or derisively, but just as wrong is it to call them geniuses. By this more harm is done than good, since a painful disappointment is then unavoidable. In contrast, the true early genius is quite often far from being smart, he is often quiet and retiring, but he produces something, and this is the main point. Entirely by himself, without being asked or goaded, he will write poetry, compose music or write essays. Even among that group disappointment may come, the special ability might fade with the years, and a sure diagnosis during the early years may be difficult. It is the quality of the work that might help; just better than average painting or writing does not mean much, except that it indicates talent for a particular profession. A correct prediction is scarcely possible, the difficulty being of the same kind as in the analogous problem concerning outstanding activities of adults. The best criterion is insistent creative activity, coming spontaneously, even against the wishes of parents or teachers.

The number of apparent cases compared with true ones is considerable; it is interesting, indeed, to note how many highly talented children dwindle into insignificance within a very short time, say, from thirteen to eighteen. What are the causes for this phenomenon? For it is certainly a phenomenon, and the more a person loves children, the more he will ponder the causes.

A child's mind is a virgin field, highly receptive to everything new. If he is by heredity dull, his receptivity is moderate, and little use is made of the open and fertile brain. Even if we love our fellow creatures, we cannot close our eyes to their dullness, so widely spread among their ranks. The same holds for children; the majority are mentally indifferent, and some are worse. But there is a percentage that will make good use of this fertility. They are unbiased, their mind is not cluttered up with unimportant details, they have no consideration for what we call duties to ourselves, to family and society. They are free to follow their

natural inclinations, their inborn curiosity, their desire to learn. Where this desire meets a fertile brain, even if not blessed with exceptional gifts, the result cannot fail to present itself in precisely that form of brightness and acuity we have been picturing. Viewed from this angle, an able and clever child does not any longer appear enigmatic. The problem is rather, why does all this advantage gained during the early years disappear so soon?

Life does not wait long to show a child that if he wants to succeed in the world—succeed in the customary sense—then he cannot do what he wants, but must do what the world bids him do. If he is interested in numbers and in their magic combinations, the fanciful edifice called mathematics, then it is best to give up that interest because with mathematics, the science of mathematics, he will not make much money. Should he insist on staying in the field, he might consider the position of a bank clerk which, under circumstances, might lead him to that of a bank director. Do I need to add that our gifted youth, with such an outlook ahead, will soon lose all interest in his science? It was a beautiful toy, but, alas, life is not play.

If his interest is writing, poetry or prose, and he appears in the eyes of his hopeful parents a budding genius, life soon takes care to destroy any higher interest by showing him that with such fancy leanings he will not go very far. He accordingly becomes a reporter.

It is this call for conformity, for the needs of life, that makes an average human being of these apparent child geniuses. This distinguishes him from the true one; the latter does not heed that call but goes ahead in the direction that is his destination. In the apparent prodigy the call from above is missing and he follows that of the world. Should he, for whatever reason, disobey the call for conformity, he would make a better than average human being, but he would of course still not become a genius, not having the making for it.

This makes a sad story, yet the development we pictured is basically correct. It is a natural process and not much can be done about it. In spite of this, we might feel guilty of accusing the structure of our social life too severely for something for which

it is not to blame. As an alternative, therefore, another explanation is offered: take it for what it is worth.

We are going to talk of the evolution of the species. Some people dislike that theory, although they wrong it. Nobody has observed the single molecules constituting a gas, yet no scientist has the slightest doubt of their existence, the indirect evidence being overwhelming. In view of similar evidence in this field, one cannot deny the basic truth of evolution.

We now make use of a principle, although its strict validity is recently being questioned by some geneticists. The principle states that the development of the individual, ontogenesis, is a condensed version of the evolution of the species, phylogenesis. The individual, starting from the reproductive cells, more specifically, the fertilized ovum, passes through a variety of stages which permit us to roughly reproduce the line of evolution of the species to which the individual belongs.

When does the development of the individual end? This, I believe, cannot be answered exactly; approximately at the time when it becomes capable of reproducing itself, an age that in man varies with race and climate. His childhood with which we are concerned belongs to this period of individual development. Let us then say that man becomes truly a member of the species homo sapiens at the age of about seventeen. Up to then he is more or less one of his numerous ancestors.

In comparing a young child up to the age of perhaps five with an ape—a comparison which, carefully executed, may show the latter to be superior—we are merely giving popular expression to a scientific principle. Although externally different, he at that age has retained many characteristics, mostly mental of those animals, in reality, of course, not of the presently existing kinds, rather of certain common ancestors. Mental development is particularly trailing, at least in man, so it appears.

According to this, a young individual between the ages of six and sixteen is reminiscent, mentally more than physically, of our immediate ancestors. In separating mental from physical features, we merely consider the brain separately from other organs. In carrying this reasoning to its ultimate consequence, we arrive at

a seemingly contradictory result. We have found that children are often endowed with mental capacities in various ways superior to those of adults. It now appears that our ancestors whose mental capacity our children represent were in possession of some attributes superior to those of the average of our species. Unquestionably this sounds paradoxical, yet it follows from our premises. What is meant, of course, is a latent capacity in our ancestors to develop into an intellectually eminent species, a homo sapientissimus, which development, however, became frustrated in the course of time, yielding instead the species of mediocre intelligence as we know it today. Interpreting our conclusion in this manner, it does not sound so unacceptable.

The reason that evolution took that particular direction lies in natural selection. Just as genius lacks practical sense for the necessities of daily life, similarly among our ancestors an idealistic, fantastic, dreamy mind could not have been successful in the struggle for existence. The mind of a variant that, although of a lower quality, was well adapted to face the common necessities of life, such as fighting enemies, killing competitors, attracting the opposite sex, remained in the long run victorious by natural and sexual selection.

There is a bit of anthropological evidence in favor of this idea. Our earliest ancestor was australopithecus which produced two different subspecies, pithecanthropus and meganthropus. The first of these two was a typical "man," carnivorous, a huntsman and a killer; the latter a big-toothed mild fellow, a vegetarian. When the two subspecies met, a phenomenon called displacement occurred. This is an involved process with many facets; its result in essence was that in the long run pithecanthropus displaced its brother meganthropus. Now, all we have to assume is that meganthropus was the more spiritual type of the two—if we are permitted to use that word for our early ancestors—and our explanation of the extinction of genius in our phylogeny may not be altogether wrong. Had meganthropus survived, our present homo sapiens might deserve its name with more justification. As it happened, the latent capacity hidden in the brain of one of our ancestors was sacrificed in order to give way to a truly vital

mentality. That latent capacity shines in our precocious children, our apparent child prodigies who are not destined to become outstanding, rather regress into a mediocre state characteristic of our species.

24 GENIUS AS FUTURE VARIETY

Part IV of our essay is concerned with possible connections between genius and the human species. The difference between genius and the rest of the species, and the elucidation of that difference forms the main problem of the entire discussion. The next question is then, is there any possibility that sometime in the future a new variety could come into being, a variety that might resemble the genius as we know him from our present records?

There is a connection between this subject and the last chapter, in which mention was made of the mental potentialities of our ancestors, and some of their latent qualities which might have become lost in the course of Darwinian selection. Such qualities can, nevertheless, appear in certain privileged individuals, as shown by the rare occurrence of the phenomenon called genius. What we are asking now is whether a variety could be bred that would show the originally present factors more clearly than the existing species. This question then belongs to the field of eugenics.

In Part II of our discourses we tried to analyze the genius, and established among his main faculties response to a call, desire for survival, unselfishness and others, all combined. We shall come back to this irksome matter of combination, irksome because mathematical, hence not easy to comprehend, but let us for the moment disregard it, and consider for sake of simplicity only one single feature of genius. It is immaterial which feature we choose, we may think of craftsmanship as representative of genial activity.

Are genial features inherited? This is the first crucial question because only then is it possible at all to think of producing a variety of the species by breeding. There are great men whose sons were also great, but the number of these is small. The instances are well known: Bach's sons were all gifted, but chiefly

two, Philipp Emanuel and Friedemann, became composers of note; then we have the Brueghels, father and son, the Cranachs, Holbeins, Johann Strauss, father and son, and more. The conclusion seems inevitable that a genial feature, such as craftsmanship, can be inherited, since chance would not account for even the few examples quoted, but that the occurrence is infrequent. The insignificant son of a great man is nearly proverbial; one often reads about the distressing situation in which such a son finds himself, being known only as the son of a great man, not as an individual of his own merit. Judging from this conclusion, one might say further that the prospect of breeding a variety of geniuses appears remote but not impossible. We shall see whether our conclusion can be verified.

The chance for a certain factor occurring among the offspring as a result of crossbreeding can be estimated according to the findings of Mendel. Let us take as an example a certain type of severe anemia. If a sick person marries a healthy one, the offspring will be hybrids, but as a rule, outwardly healthy. The reason is that the anemic factor, actually a large molecule, one of the many so-called genes, located in the nucleus of cells, is in outward manifestation weaker than its counterpart, a gene representing a normal, nonanemic factor. The first is termed a recessive factor, the second a dominant factor. Let us now cross two such hybrid, outwardly healthy persons who are only seemingly healthy, in reality they carry the anemic gene in their cells. The second generation of hybrids will show a Mendelian splitting in the following manner. One quarter of the offspring will be purebred and healthy, carrying only nonanemic genes. Another quarter will be also purebred and sick, carrying only anemic genes. The rest, that is one half of the offspring, will be again the same hybrids as their parents, outwardly healthy.

Assuming now that genial features behave similarly, the marriage of a genius with a normal person would yield a hybrid. Since, as we have seen, the child in the majority of cases will not be gifted, the gene of genial features must be recessive, just like the anemic gene. If it should be possible to find two such hybrids, their marriage, assuming that they could be persuaded to marry

and produce many children, would show Mendelian splitting, three quarters of them being plain persons, and one quarter gifted.

So far this seems an involved but not impossible procedure to produce by eugenic methods a pure variety of gifted persons. We now encounter the first snag. Experience has shown that hybrids in many instances are more resistant than purebred individuals; in fact, the latter often perish due to low resistance of the organism to unfavorable external influences, thus, their chances of survival by selection are low. Returning to our example on anemia, the purebred anemic individuals ultimately die of severe anemia, while the purebred nonanemic individuals, due to low resistance to malaria in certain localities, will not be able to successfully carry on their struggle for survival. The hybrid, outwardly healthy individuals stay healthy and survive.

Applying the same reasoning to the breeding by eugenics of the gifted, it will be seen that the one quarter of children that was expected to exhibit the genial feature, and are purebred, might turn out to be of too low resistance against illnesses to be of much value for further breeding purposes. In parenthesis, this state of affairs is in agreement with the observed connection between genius and illness, discussed in Chapter 20.

Our result so far is not meant to discourage any attempt of planned eugenic action, only to point out the difficulties likely to be met along the road. In case the reader is not too bored by these far-fetched matters, will he kindly go on reading this discussion?

Let us see what complication arises if we give up the notion of one single feature, and consider the multiplicity of them, representing genius. Some ten different characteristic features were discussed so far; not as if the number were really ten, we may have omitted some. The independence of these features were emphasized, they might occur in any combination in gifted persons. The independence implies that they are represented by different genes, just as blue eyes, blond hair, and an aquiline nose are represented by separate genes, located in the forty-six to forty-eight chromosomes, small microscopically visible granules of various shapes present in the cells. Each of these essential factors

is inherited separately according to Mendelian laws, and the ten different genes of genius must in the process of breeding be united in one single offspring in order to produce a genius. As will be realized, the chances for such a combination are much less than before, where we considered only one factor.

For an illustration of what can be expected from raising the number of characteristics, let us consider a bag full of balls, half of which white, half black. If we grab two balls from the bag, what will be the probability of grabbing two white ones? The answer is: one out of every four pulls. Now let us assume that one third of the balls in the bag is white, another third black and another third red. In other words, the number of kinds has been increased from two to three. The chance that, in pulling three balls from the bag, we grab three whites is now much less than before; in the average, one out of twenty-seven pulls will be a three-white pull.

The chances of producing a strain of geniuses by crossbreeding is in the light of this information much less than previously estimated. Let us again crossbreed a genius with a normal person; the result will be a hybrid, a nongenius, since according to our assumption genial factors are recessive. If two such hybrids marry, the chance for all ten features occurring in purebred form is ridiculously small, one in little more than a million. While for plants or fruit fly such figures are not unrealistic, they become discouraging when applied to man. Theoretically, based on our present status of science, eugenics has no easy task in producing a new variety of our species, one that would consist of geniuses. In spite of the small probability one cannot say the plan is impossible, the word has no place in scientific predictions. Rather, we would emphasize that our analysis has shown that the plan, although difficult, is not in contradiction with basic principles, hence possible.

What would such a project look like in actual execution? A start would have to be made with several couples, the more, the better. The men should be as close to geniuses as possible. As for the women, we would have to be content, according to the exposition in Chapter 22, with highly gifted persons. It is desirable

that each couple have a large number of children. Of these the most gifted would be selected and coupled with each other. This process would be repeated for many, many generations. Special attention would have to be paid to the avoidance of close blood relation between partners chosen. For this purpose the continual injection of new, highly gifted persons would be necessary.

In this manner, after many carefully planned generations, a variety might be produced in which the ten desired characteristics become more and more concentrated. There is no a priori reason to assume that, if such a variety is attained, women would show a lesser tendency for exhibiting genial features than men, notwithstanding that that is the position today.

As for finding suitable subjects for the starting generations, we refer to a remark made earlier, namely the possibility that with an ever increasing number of working women the difference of genial incidence in the two sexes might gradually level off. Such a change would definitely favor the choice of suitable starting subjects for eugenic planning, and might even be necessary before actually embarking on the project. Personally, I do not relish the idea of women working outside and abandoning the household. For some women, outside work is well suited, to many not in the least. This personal preference, which probably many other men share, is, however, insignificant in relation to the present topic, the improvement of the existing species of homo sapiens. If a new, spiritually superior variety could be cultivated, sacrifices probably would have to be made. It has been pointed out that for man, as well as domesticated animals, natural selection has lost much of its efficiency. We all are too well protected. If so, artificial selection has to take the place of natural selection. Into such a project many artificial features would enter, some of which might not be to the liking of the man of today.

25 PSEUDOGENIUS

The topic we are to discuss next fits well in this place, although it is in no way a continuation of the foregoing chapter. There has been, nevertheless, much reference to partial geniuses and gifted people, and these could well be treated from a unified angle, including also certain other, more or less odd types that occasionally may even arouse our pity mixed with irony.

In Chapter 1 the true genius was described as a man who unites in him all essential features discussed. However, it was said, odd combinations in which some features are missing, and others in which only one or two are present do actually occur. It might be added that these incomplete combinations are much more frequent than the complete ones. Let us then say a few words first about those in which a few essentials are missing, people that may be termed incomplete or partial geniuses.

The borders, as was mentioned, are fluid and rest partly upon the personal taste of the viewer. Some of you might have wondered why such and such a name has been included under the lofty designation, genius; others have probably disagreed with the exclusion of certain persons, whom they consider as fully deserving the name. The subject is not rigorous and the limits are not clear-cut. Some additional light will be shed on this matter when the work of genius comes up for discussion in Part V. For the time being we talk of the man, and the picture, therefore, is not complete.

Let us take inspiration, one of the chief characteristics of genius. Unquestionably there have been men who lacked this particular feature, while the other features were more or less present. Examples are Delius or Chausson in music, whose craftsmanship cannot be questioned. As for inventiveness in composition, it can hardly be maintained that they possessed that precious gift. There are

many excellent scientists who, because of lack of invention, are only harvesters of a field sown by others.

There are those who lack another crucial characteristic, unselfishness. These are men who in a sense sacrifice their genius for money; they lack idealism and mostly that other feature, desire for permanence. They usually know that their work is of an ephemeral nature. This knowledge does not disquiet them, present fame is more important to them than the appreciation of future generations. They are realists, hence cannot rank among the great. Minor writers, artists belong in this group.

Another essential that is often found lacking is universality. These men have a relatively narrow competence in certain specialized fields. In this category belong writers known nearly exclusively by their own countrymen since their view did not reach beyond the national horizon. There are many highly valued minor scientists in specialized subjects in which they became experts or even discoverers. Painters of a very restricted range, such as portraitists, belong to this group.

The importance of this class should not be overlooked. Because of the scarcity of true genius, humanity would be badly off without the minors. They supply the vast structure of knowledge, write the books that fill our libraries, paint the canvases that comprise a good part of the art institutes. If only the giants existed, there would be no science and no art as we know it today. Thus, in making certain differentiations which may appear unjust to some we are in no way contemptuous; it is for clarity of the concepts involved that we make them.

At the other end of the line are those who possess one or two essential features only. While rarely of significance, these people are of interest, mainly from a psychological standpoint. To deal with them properly would require an entire treatise, written possibly by a psychiatrist. While we called the first group incomplete geniuses, this second class is better termed pseudogenius. And this is exactly the nucleus of the story: these people are in the contradictory situation of being average persons with one or two exceptional characteristics that are not sufficient for them to create anything of true value.

There are various types. One is blessed with inventiveness, but there the blessings end. You know the kind: they simply bubble over with new ideas; each time you meet them, they surprise you with something new: a new project, a new invention, a new discovery. Most of the ideas are worth nothing; some may be fair, the trouble only is that they cannot do anything with them. What they lack first of all, is patience and perseverance; they do not stay with any of their spiritual offspring long enough to develop it into something worth-while. Jumping from one matter to another is their very element; they love change too much, and that is their downfall. In addition to this mental fickleness, they do not have the necessary ability to carry out a plan, even if they wanted to devote some time to the execution.

They are well satisfied with themselves. Their judgment is usually poor and they do not realize how ridiculous they must appear to others with better judgment. It is also true that there are gullible people who are impressed by our inventive friend because often he is a voluble talker, and sometimes a good talker who is able to put his ideas across and garnish them with bits of incomplete knowledge picked up from newspapers and magazines. The favorable impression they make on naive listeners boosts their ego, and they become convinced of their exceptional ability deserving every praise. They do not usually get very far in life, which they take as a sign of the general injustice prevailing in this world.

In a sense a counterpart to that type is the one blessed with craftsmanship—exclusively. These are the people who can do everything, whom you have only to ask, and they will answer, oh, I can do that! Not all of them are quite so versatile, we find some who specialize, but it is always the craft that shines—never an idea behind it. They are true artisans and proud of it: they know that there is power in their hands, and they make no secret of their ability. They are better than the first type because they do accomplish things. However, their self-confidence is exaggerated; most are dull people, who have to be told what to do, since their own supply of ideas is nil or at best scanty. In their defense it must be said that they are often conscientious workers,

we find oustanding clerks and mechanics in the group. In this class belongs also the uninspired scientist who spends his life with determining the magnitude of certain properties accurately to the fifth decimal. In this group belong also the commercial artists of various description: the commercial painter who has a fine ability to draw and to color, but whose work is as flat as the paper on which he draws; the writer of magazine stories, written sometimes with remarkable fluidity and vividness, a surprising vocabulary, studded with natural and true-to-character dialogs, but without a trace of originality; the composer of hit tunes who writes strictly after an accepted pattern, exactly like the next hit tune writer.

Still another type of pseudogenius is characterized by an exaggerated degree of perseverance, without the other requisites of greatness. This doggedness can assume nearly pathological dimensions. The man has some vague idea and some limited ability to carry it out; unfortunately, neither the idea nor the execution has merit. What the man lacks most of all is a solid foundation: he had no true education and his knowledge is hazy and patchy. Typical examples are the so-called crazy inventors. They insist on the validity of their invention, despite the dissuasion of all to whom they talk about it. Since they have no solid knowledge, objections are of no avail, they simply do not understand them. In many cases they have never built a contraption according to their plan, and spend years persuading donors to finance their projects, mostly in vain. If they find a victim, the latter's money is, of course, inevitably lost, but with the most honest face and true conviction they will come and ask for more. In other instances they have built something that approaches what they have in mind, which, however, never works as it is supposed to. Anybody wishing to inspect the machine is eyed with suspicion, as if the person intended to steal the invention; altogether the type is wary and apt to see a rival in any who shows some pity-inspired sign of interest. Thus they go on and on, without a chance of success. They are firmly convinced of their genius, alas, unrecognized and suppressed by an envious world. The type is truly

tragicomical and offers quite a problem to an unbiased observer. Molière missed a good opportunity by overlooking the subject.

The operation of a quasi-external constraint, the consciousness of a calling was mentioned as basically the most essential among the characteristics of genius. While no genius is thinkable without that force, he could do nothing without the other necessary requisites. Yet there exists another type of pseudogenius who is precisely in that predicament. The feel of a call may be strongly developed in a man, and some of the other features, notably an unselfish, idealistic attitude, and a remarkable perseverance also may belong to his nature, but the two main ingredients, namely true inspiration and a thorough mastery of the craft, without which no creation is possible, are missing or developed only to a rudimentary degree. No queerer combination of natural gifts can be thought of.

The man is convinced from his earliest youth that he is destined to accomplish something great, and his inclination is mostly directed toward specific channels. While youthful ambitions coupled with positive abilities often evaporate in blue mist, as previously explained, the ambitions of this particular type do not vanish with youth. The man is quite serious and determined about his calling, although others, observing his efforts with an unbiased mind, may entertain considerable doubts as to the wisdom of his undertaking. Knowing that immediate surroundings of a genius often disapprove of his insistence, our man pays only moderate attention to such criticism. He cannot be blamed, for the call is strong, and, although he himself must admit that no youthful productions, characteristic of true genius, have been forthcoming, he argues that in certain cases among the great development was slow, and that he himself might belong to that category, called classical. It would be unaccountable, he argues, to throw up everything only because production is slow.

As the years go by, he sees clearer, provided that he has sufficient self-judgment, that something must be wrong somewhere. And no wonder that things do not take the course he has expected. As mentioned, his inspiration is either absent or weak; he conceives certain ideas, but they lack solidity and connection with

the times. He wanders along a path that is all his own without being rooted in the spiritual world of his time. Curiously enough, just this solitariness was mentioned as typical of true genius, while now it appears as a sign of pseudogenius. The differences are subtle and not easy to grasp. However original the ideology of true genius, it must be solid, precise and substantial. Our man's ideas are often vague and thin, although they may be original and not without merit.

More important perhaps is the execution of his work. Execution, both of a project in general lines, and of the finished product in all its details is really what counts: it stamps a work great, medium or poor. Our pseudogenius fails pitifully in this respect. His inner urge is so unconquerable that he diligently executes all his projects, be it a work of science, art or philosophy. The result is deplorable, which is the more remarkable, since he carries out certain other duties in his life satisfactorily. When he obeys his inner urge, his *grande passion,* he fails—mainly because he lacks mastery of the craft. Besides lacking a solid foundation upon which all mastery rests—he is usually self-taught and can be described as a dilettante—he lacks the true, congenital ability to execute a work in the finished manner of all great work. As a result, he is a bungler.

One is accustomed to associate desire to carry out a work with the ability to do it, and such a connection may be nearly always observed. The oddness with this type of pseudogenius is that there exists unquenchable desire where true ability is missing. As long as such an activity has the character of a hobby, there is nothing objectionable; it becomes more of a problem, if the man looks at it as his main calling, and is unwilling or unable to do some other kind of work.

Are the pseudogeniuses of this last type regrettable? In a way they deserve our pity, from a purely objective standpoint they even appear comical, on the other hand they are often satisfied with a world they have built for themselves. As idealists, they seldom care for public praise, another quality which they share with the true genius. They live their own secluded life in a certainly abnormal manner, again resembling their true counterpart. Al-

though their life may be considered valueless for humanity as a whole, they are often contented with their queer lot, and to feel pity for them would be out of place.

V

WORKS OF GENIUS

26 INTERNATIONAL APPEAL

As you may recall, we decided to discuss first the man and then the work of genius. We said that the two actually formed one unit, but for practical reasons the subject would be split into these parts. We accordingly will devote this last part to the work of genius, to a characterization of what may be termed a masterpiece in any field of genial activity.

Certain repetitions will not be avoidable; in particular, we wish to emphasize that this coming discussion does not deal with masterpieces as such, detached from the man, rather with their relation to their creators who, after all, form our main theme. The work is merely another facet of the man of genius, one that in our ignorance we cannot entirely derive from an analysis of the man himself, as it should be possible if our knowledge of the subject were anything near complete.

Perhaps the main feature of a masterpiece is its universal scope. As this subject is mentioned, we recall that in Chapter 8 we enlarged on an analogous feature of the genius himself. The two subjects are in a way similar, in another way quite different: the one dealing with the universal character of the man, the other with the universal feature of the work. In spite of this difference, the analogy is close enough so that in this instance one may infer one from the other: having established universality as a basic feature of the man, that of the work follows logically.

This universal feature of a masterpiece is twofold: in space and in time. This chapter deals with the first, and the next one with the second, equally or more important feature.

By mentioning universality in space, let us discuss in the first place the spread of a work over humanity as a whole, over different professions and orientations. We can make the following statement: the greater a masterpiece, the wider its spread among

the differently oriented and interested people, with emphasis, however, on the more educated groups.

It has been stressed before that if a work of art is enjoyed by the masses, it is probably of limited value. There seems to be a contradiction between that earlier and the present statement which must be clarified. The present emphasis is on the generality and many-sided character of a great work by means of which it strikes resonance in listeners or viewers of diversified interests. Such a work is not of a specialized nature, with an appeal to a few. Although the subject may be of limited scope, in its execution it gains width, touching on a variety of matters, satisfying a variety of different tastes. Compare Shakespeare's masterpieces, such as *Hamlet* or *The Merchant of Venice*, with some of his historical plays, such as the Henry VI trilogy. On the stage the latter gains in appeal, but when read, there will not be many who will sincerely express delight; appreciation might come from scholars, historians, literary gourmets and the like. Have *The Merchant* read by a wide circle of people, of varied profession and varied degree of interest: most will discover something that fascinates them. Or another illustration: think of Rembrandt's *Man with the Golden Helmet*, and compare it with the portrait of Lord Heathfield by Reynolds—you will probably see my point. This wide appeal is a fairly sensitive criterion of a true masterpiece, as so delightfully expressed in the prologue of Goethe's *Faust*. A word of caution, given several times before, is appropriate at this point, and that is that our statement cannot be reversed: while a masterpiece is nearly always of universal appeal, a product of general appeal may under circumstances be very far from a masterpiece. An overture by Suppé delights everybody, without being of true artistic value; the reason is that much more than this one criterion must be satisfied by a great work. The requirement of a multiplicity of qualifications is as valid with regard to the work as with regard to the man.

However many-sided a work, it can create resonance only in a mind to a certain degree kin to its creator's mind. Hence, its appeal will be most pronounced among groups of higher educational level. Width in the sense used here does not include people

of lower cultural level. The latter do not have the necessary learning and training to appreciate a work of some depth. This is not meant in a derogatory sense: that group of people may possess ethical values not shared by the more educated, not to mention its economic contribution to the community. The fact, nevertheless, stands that for the satisfaction of its spiritual demands that group does not need masterpieces. It needs works of a simple quality, produced by professional men who know exactly the demand of the group and produce accordingly.

A poignant and humorous presentation of the question whether the appreciation of the plain people stamps a work worthless or valuable, is found in Wagner's *Meistersinger*. Beckmesser, representing the classical or pedantic standpoint, scorns the judgment of the people, Hans Sachs on the contrary values it highly. Wagner, who was strongly theatrical and wrote often for effect, must have taken a mediatory stand. In keeping with our own statement, it appears that Beckmesser's conservative opinion approached the truth closer than the views of Sachs, as demonstrated, in fact, by Sachs's historical role, by his many popular comedies which cannot in all objectivity be called masterpieces.

To sum up, esthetically untrained persons cannot judge the true value of a work of art, and their appreciation often grades the particular work as inferior. With this reservation, our statement on the general appeal of a masterpiece to persons of varied professional and cultural interests will not appear contradictory.

Let us now leave the varied strata of humanity, and look into a second kind of diffusion: that over the different countries of the earth. The same thesis that was found in the previous case holds here too, and with the same added restriction.

Letters and diaries interest as a rule only the writer himself and the recipient: they are, with few notable exceptions, without literary merit. An article for a newspaper, meant to interest a small community, is a slightly better product. An article for a magazine must of necessity be of still better quality. You can see where this argument leads.

Textbooks of literature contain names of many authors known nearly exclusively in the country in which the textbook was

written; similarly art institutes contain a vast number of pictures unknown abroad. If we had not excluded statesmen from our discussions, we might add that legions of them are found in corresponding texts and dictionaries of their own country. This is not due to local patriotism; it is an indication that the men in question, due to their mediocrity, achieved national fame, without penetrating beyond the country's boundaries. Looking into such a recognized dictionary as Larousse, one cannot fail noticing the prevalence of French names among the biographical entries, names one has never heard of.

The characteristic of a true masterpiece is universality to such a degree that it speaks to people anywhere irrespective of their nationality. The requirement is a stringent one, considering the difference in national characters. When talking with foreigners, one is often surprised to find that in economic or ethical matters the difference is not too great. The main and substantial difference lies in their traditions, especially in cultural fields. This is little conspicuous in science, which is basically international, but is so in arts, philosophy and religion, fields determined largely by education and tradition. It is not surprising then that an average work of art may be considered great in its own country, but little appreciated in others.

A work of genius is so deeply human, touches so basically the roots of our psyche that national boundaries crumble at its approach. Foreign nationals notice its strangeness, the points in which it differs from what they are used to, but they accept it in face of its overwhelming human character. Shakespeare is very typically English, so is Dickens, the latter even more so. However strange the characters depicted in *The Merry Wives of Windsor* or in *David Copperfield* must appear to a Frenchman or a Japanese, behind the local veil he will notice universal traits, and he will gladly hear or read these works, despite the unquestionable effort he must make in order to assimilate them. Chinese and Japanese woodcuts are so strictly local in character that Westerners do not easily experience full enjoyment in viewing them, yet they will not be able to resist the immediate power of the masterpieces of Sharaku, for instance, a leading Japanese theatrical portraitist.

This criterion of penetration of a masterpiece is less significant in science, as mentioned. In music, too, the relatively easy means of transmission lessen its weight somewhat. Unquestionably its greatest implications are found in literature where the problems of translation add to the obstruction of national boundaries. In poetry this irksome matter of translation is even more restrictive than in prose. Translation of poems, notably lyric poems, into a foreign language touches on impossibility. Translations of Heine's love poems into another language, conveying all the beauty and sentiments of the original, do not exist. A masterpiece of poetry must fight against great odds in penetrating the barriers between countries. As a result, although known abroad, they are not much read, except by professionals, or by people who can read the original. That holds for the masterpieces of all countries: the poetry of Heine, Keats and Baudelaire is known, although little read in foreign countries.

Prose is more translatable, although the difficulties in bringing out the nuances of the original are also formidable. No translation can do justice to the language of Dostoyevsky's novels. The fact that these novels are appreciated and widely read abroad is a double proof of their greatness: they have to overcome a natural resistance against strangeness as well as a poor rendition.

One sometimes hears complaints from small countries to the effect that their art is not appreciated abroad, not as much as that of large countries. No doubt, small countries have to contend with a certain handicap. It is maintained, for example, by Hungarians that their novelist Maurus Jókai wrote masterpieces that would be hailed loudly, had he been a German or English writer. One of his best novels, *The New Landowner*, makes a truly delightful reading in the original; in existing translations, however, it has lost all its inimitable flavor. If a first class translator tried his skill at it, its universal appeal might gain, and it must be admitted that such a translator, mastering both Hungarian and English, would be hard to find. Thus, very little effect has ever been made to effect perfect translations, whereas every effort was made to render into English the strikingly difficult *Doctor Faustus*, for instance, written partly in the language of Luther, as perfectly as possible. On the

other hand, one must say in order to be just that Jókai's novel, although excellent in many ways, is of local character throughout, without the truly universal human appeal we find, for instance, in *The Brothers Karamazov*. The complaint of small countries is, therefore, only partly justified.

Where such handicap does not exist, as in music and painting, there is no difference between small and large countries with regard to appreciation by others. The esteem the great Dutch painters enjoy all over the world is a proof for that.

Finally, a word of caution as before. Wide acceptance of a work the world over is in itself no evidence of its being a masterpiece. Acceptance by the masses does not count. As an example let me mention Thomas Mann's *Buddenbrooks* and Bernhard Kellermann's *Tunnel*. Both found world-wide acceptance, the first mainly by the educated strata, the second as a thriller by the masses. Only the fiirst is a masterpiece.

27 SURVIVAL IN THE FUTURE

We concluded that a work of genius has no limits concerning the population of our globe; it diffuses over the latter's surface as a gas fills all the space at its disposal. There is still another dimension, time. A work of genius will penetrate that too, there are no barriers of time it could not transcend.

This diffusion in time is more important than that in space. The latter is limited inasmuch as our own planet is concerned—whether this situation will change in the future, remains to be seen—but time goes on and so far no limits are set and none can be foreseen. At each new generation the earth becomes populated with new inhabitants, and so the potentialities of time are greater than of space on earth. Indeed, the thought that a masterpiece should survive all generations to come is not easy to comprehend and cannot even be stated with absolute certainty. Our experience in that respect is not long enough to permit extrapolation. All we can say is that it seems true as far as our own reckoning of time goes: masterpieces born within the last three thousand years or so have survived the appreciable change in human interests during that period. The only condition appears to be a reasonable preservation of the work which, unfortunately, has not always been the case. Yet as technique advances, that condition will be better fulfilled; we do not need to fear that the testimony of entire cultures would be wiped out as probably happened in the past on several occasions. Of course, even in that regard we should not be overconfident, world catastrophes could occur, whether wrought by man or by nature. This limitation to our prediction still exists, and we cannot entirely overlook it. Compressed replicas of our major cultural accomplishments have already been deposited in the depths of rocks to bear witness of our age to future generations, should

such a catastrophe, much against our expectations, annihilate our culture.

In examining this ability of a work of genius, this survival for all times, it is perhaps advisable to look separately at works of science and of arts. Although no fundamental difference will be found, the approach to the two is different.

A piece of scientific knowledge, particularly one resulting from observation and experimentation, may be considered a piece of truth, assuming that no crude errors crept into the observation in question. If it is a piece of truth, it follows that it will remain so in the future. Although the edifice around it will change incessantly, altering the position and significance of the piece in relation to the rest, its validity will remain unaltered. The statement holds for all correct pieces of information, whether it refers to a small detail or a major concept, to a minor work or a work of genius. Thus we see that as far as scientific work is concerned, it all more or less survives; having once been placed as a brick into the building of a particular discipline, it stays there. Let us mention as examples the atomic weight of an element, the density of a metal, the course and distribution of an artery: these facts are in the majority of cases not the work of a genius, rather results of tedious work of minor scientists; yet they survive for all times. Mere survival in science is no criterion of a masterpiece.

These details, although they survive in the archives, do not, however, survive in the pulsation of new scientific developments. The masterpieces of science are those that are mentioned hundred and thousand years after their establishment by researchers of future generations. This is because their nucleus is so weighty, their concept so broad that future developments are unthinkable without them, and are actually based on them. It often happens that limitations of these concepts are found, indicating where their validity ends and where new principles become necessary. Precisely these limitations show the depth of the concept, they prove that, although science has progressed in the meantime, it is necessary to revert to the principle found centuries ago and establish a new one by extending it in certain directions. Euclidean geometry, established more than two thousand years ago, is such a masterpiece:

it was found necessary to widen it—Riemann did the extension in the nineteenth century—proving by this the width and power of the original foundation. Another well-known masterpiece of science that survived into our times and will continue to be an inspiration for many more centuries to come is Newtonian mechanics. It too was widened by Einstein as a proof of its ever young strength and usefulness.

It is this vitality of a scientific work of genius that makes it not only survive, a feature characteristic of all correct scientific information, but makes it bring forth fresh shoots and new leaves centuries after its discovery and formulation. This never fading vitality, spreading into the fourth dimension of time, is the true characteristic of a masterpiece in the realm of science.

With masterpieces in the field of arts we come to the core of our topic. Since the question of correctness does not enter the picture, a work of art does not survive in the sense scientific works do. A survival for all times has then a greater significance than there.

An artistic creation, irrespective of its value, has an immediate effect upon contemporaries, since it deals with matters of direct interest, using means that are directly understood. This point was mentioned earlier, and it was emphasized that minor artists pay particular attention to this immediate demand of their public. Great artists do not neglect contemporary interests either, although some of the very greatest pay little attention to the living public.

Since, then, people's artistic reception is focused on the immediate, it is only with some effort that they can concentrate at all on a work of art of the past. We disregard those strata of the population that due to lack of education have no artistic appreciation, and consider those who have been lucky enough to receive that education. Even those prefer a contemporary novel to a classical, a modern play to an old one, a recent painting to a medieval; they miss the direct appeal in the old subjects, and often cannot find the way back to an old work. The fact that some masterpieces still appeal to them, and that these are able to compete with the new works against a considerable handicap is then a sign of lasting value.

This ability to penetrate the barrier of time is the same that penetrates the boundaries of countries: the deeply human character of a work of genius. Such a work does not move along the surface, picturing events, stories, landscapes or persons, it gives the truly human, the unchangeable. It is not easy to express in a simple formula what makes a masterpiece immortal, we have to accept it rather as an empirical fact. Let us choose as an example a masterpiece, yet one that is not as obvious as, say, some of Shakespeare's works: *The Seven Against Thebes* of Aeschylus. Even an intelligent reader—not a scholar, of course—will have difficulty in enjoying that drama; why, then, has it survived? It is not merely an historical drama of which there are many in the archives of minor world literature, it imparts to the reader or listener in a direct manner a variety of human passions that are still active today, the same as two thousand five hundred years ago. The lamentation of the Theban women over the horrors of the siege and dangers they are facing are the same as people's reactions to war nowadays; Eteocles is the representant of today's sabre rattling military men; the fight between the brothers Eteocles and Polyneices gives a truthful picture of ruthless lust for power, effective then as now; the resolution of the city council to prohibit the rebellious brother's burial is a tragic presentation of bureaucratic narrow-minded petty politicians not a bit different from those we know today. One wishing to acquaint himself with that drama must run against a hurdle of its strange subject, way of presentation, and style. If he overcomes that obstacle, he will experience a unique sensation when he finds how little humans have changed in that long span of time; a sensation only a masterly presentation can impart. If, in contrast, he reads or hears a mediocre work of the same vintage, he will experience little more than boredom, same as if he waded through an old legal document.

The human value of a masterpiece, equally present in music and painting, is most evident in serious subjects, such as the one discussed. The voice of fatality in a work of genius is not as obvious in a humorous masterpiece, although as well present. Let us again choose an example not too widely known: *The Acharnians* of Aristophanes, a biting satire against war mongers and war

profiteers. That comedy is so entirely different in its structure and plot—there is no plot, as a matter of fact—from a modern comedy that again a reader will not easily plow through its intricacies, but once he does, he will be amply rewarded. There are many references to contemporary events and persons, and much remains incomprehensible to us, but it is exhilarating and never dull. It is as if somebody opened a bottle of carbonated drink which has been kept sealed for centuries: it will start bubbling in spite of its age.

Sometimes one hears the accusation that classics in all fields of art have been by artificial means promoted to that rank. Experts and critics make us believe in their excellence, and we do not dare to contradict them. Although this notion is not generally justified, artificial means play a certain role in judging masterpieces. There are movements that on occasion lift a work from relative oblivion, at other times drop another which had been held high. In other words, tastes change, and some masterpieces are esteemed by different epochs to a different degree, the changes being sometimes entirely natural, sometimes initiated by small groups or even individuals. It is known, for instance, that Ibsen's dramas lost a good deal of their reputation during the past half century, and it cannot be predicted whether that reputation will ever come back. If not, the conclusion is justified that they are no true masterpieces, notwithstanding some critics might have had a hand in their disappearance from their pedestal. Although Mendelssohn was instrumental in the revival of some of Bach's music, nobody would maintain that the present appreciation is only kept up artifically. There may, however, be instances in which such a suspicion could be justified; the literary value and masterpiece character of Vergil's *Aeneid* is open to question, and only the future will show whether or not it deserves the fame it has been more or less enjoying up to now. There is at present an unquestionable renaissance of seventeenth century music; although, no doubt, initiated by music experts—no layman would conceive the idea of wanting to hear or play Vivaldi—the basis of the movement lies in a certain similarity between that old music and ours of the twentieth century, making that music more enjoyable today than it had been during the romantic period. With times the appreciation of art also changes;

the fact that a particular work braves the fluctuations and keeps coming to the surface remains a sure sign of its grandeur.

28 ORIGINALITY

The feature that comes chiefly to mind when thinking of a great work is originality. From another angle, this was discussed in connection with the man of genius; we will now look at it from the standpoint of the finished product.

The first question one is apt to ask when judging a work is, Is it new, is it original? The question is, doubtless, justified, since the establishment of something new is the basic feature of creation which is the prime achievement of genius. A work which is mere repetition of what has gone before in some form or another cannot be considered great. There are too many imitators and followers in every field, and their work scarcely ever ranks among the great: this is simply a fact borne out by experience.

When thinking of originality, the subject matter of a work comes first to mind. It is the topic, the main theme of a work that is probed for originality: the essence of a scientific discovery, the principle of a philosophical system, the subject of a novel. The demand is rather stringent, and, as a result, most often the verdict is unfavorable. Critics often point out that such and such a work, although it has certain good points, is by no means original. It is thus worth while looking closer into this matter of originality.

In the field of science nearly all masterpieces are highly original; indeed, the word discovery implies the feature of novelty. Darwin's *Origin of Species* is a masterpiece of unusual originality, in fact, of a revolutionary character; the work of William Harvey, discoverer of the circulation of the blood, opened an entirely new chapter in physiology; the system of Copernicus established modern astronomy by refuting the earlier notion of the earth being the center of the world. Treatises elaborating on discoveries of others do not rank among works of genius, however great their importance.

Although novelty is quite obvious in the cases cited, there are others, detected by students of the history of science, that to a certain respect contradict our statement. Often the man who first discovers something publishes only a short note which does not attract much attention. Along comes a second man who elaborates on the subject, writes a detailed treatise and receives all the credit. Apart from the matter of fairness, the question may be asked, which of the two dissertations can be called great in the sense the word is used here. The fact is that, although only the first is original, the second which opens up a new field and points out all the possibilities it entails is the greater of the two. An example is Roentgen's discovery of X-rays, certainly a masterpiece, although Crookes observed them casually before him. In science, such cases are quite frequent, and, more or less, of interest to the historian only. Another is the measurement of acidity, particularly as it applies to biological systems. That discovery is associated with the name of Sörensen, although the technique was first described by others, notably the anthropologist Friedenthal. It was, however, Sörensen who recognized the significance of the method and applied it in a generally useful manner.

It is perhaps not so much the subject itself but the way in which a subject is treated that really matters; therein lies the true originality hidden. Quite clear is this situation in philosophy. The bases of all philosophy can be found in the old Greeks, and without exaggeration it can be said that nothing basically new has been added to them by any of the philosophers since. The problem of deity, the antagonism of body and soul, materialism and idealism, empirical or transcendental thinking, determinism or free will, reality of thought versus reality of matter: these are the basic foundations of all philosophy. What has been added since is the manner in which these basic ideas have been dealt with, and the proofs which have been used to strengthen one or the other alternative. While the ideas were clearly recognized by the Greeks, they did not possess sufficient knowledge to treat them otherwise than by guesses, pictures, analogies, syllogisms, sophistic reasoning. The method remained the same through the Middle Ages, and only with Descartes, Hume and Locke did a new era begin: the appli-

cation of a new method, the evaluation of scientific observations, to the same old problems. This has since become increasingly effective by the development of exact sciences.

Nowadays we can distinguish two kinds of philosophical systems. One deals with a general picture of human knowledge, and in this sense it is a summary of our present status of exact sciences. The problems are still the same, but as science develops, the summary must continually change. There have been a few masterpieces along this line, not many: the works of Ernst Mach and Henri Poincaré are among them. Since the development of quantum mechanics, utilizing, among others, the so-called uncertainty principle in contrast to strict causality, several philosophers have tried their hands in establishing a new general system, using the new physical ideas; whether any of them has succeeded in creating a masterpiece remains to be seen.

The second philosophical system is that of human values. This, unfortunately, has not used scientific methods, since a science of human nature does not yet exist. Thus, these people are in a difficult position, they deal with old problems, and are more or less restricted to the old techniques. Fichte is a representative of this kind of philosophers: his work, despite its merits, can scarcely be called a masterpiece. The same holds for the work on ethics of Spencer. Only few succeeded in instilling originality into the old edifice: Schopenhauer is one, and among the recent ones Albert Schweitzer. It is certain that philosophers of this kind will be more successful in the future; there will be at their disposal a solid scientific foundation, permitting them to be original in the manner in which they will deal with the old topics of human values: ethics and esthetics.

One might think that originality in arts, music, for instance, may well refer to the main theme used in those works: the wealth of melody is inexhaustible, and new ones can always be invented by composers of originality. This on the surface is correct; looking at the matter closer, it too needs amplification. Originality in music does not necessarily mean a new melodic theme. It is essential, but not sufficient. A piece, utilizing a new melody, but composed in the style of Ravel would never be called original. Again we are

faced with the same point as before: it is not so much the main theme, rather the technique by which it is developed that must be novel. This is the reason why musical technique keeps changing: if a new twist in the melody sufficed, masterpieces could be composed in the romantic style today, which—alas, I might add—is not possible. Beethoven's sonatas, Wagner's *Ring*, Orff's *Carmina Burana* are works of genius because they represent a new style in composition which did not exist before.

Literature offers another field in which similar observations can be made. True, a novel should possibly not be the copy of another regarding plot. On the other hand, relatively small changes are sufficient to produce a new plot, otherwise similar to an old one. Actually, novels without a plot at all may be work of genius, as those of Proust show.

We touch here on the delicate question of plagiarism. It was mentioned before in another connection that Shakespeare utilized known plots for his plays. A drastic case in point is his *Winter's Tale:* the plot adheres rigorously to Robert Greene's *Pandosto,* except for the very end of the story. The similarity in this case was so obvious that Greene called Shakespeare "an upstart crow beautified with our feathers"; quite remarkable, considering that the latter's version is thought of as a masterpiece today, while the former is unknown except to students of literature. The example shows that originality of plot is secondary to that of the treatment. Using an older source for a plot is so frequent an occurrence that entirely original ones would be probably hard to find in recent literature, although some do exist. Goethe enlarged on this matter and thoroughly defended the use of existing sources as long as in other respects the execution was original.

Perhaps too much emphasis was placed in what we have said on execution and style. These features were mentioned for sake of brevity, actually they are too narrow to be adequate. Originality is as little restricted to style and execution as to the theme. There are more facets that may be original, and may contribute to the character of a work of genius. In most general terms, then, originality of a work means the opening up of a new field, a new direction, the founding of a school the followers of which can

elaborate on the new and show up the many possibilities it embraces. The wider the school and the more numerous the followers, the more justified it is to call the initiating work a masterpiece. We have used the term, more justified, because originality at its best is only one of the various features of a work of genius. All or nearly all features must work together, just as was noted with regard to the man.

This leads to our closing remarks. There are instances in which originality of a work does not stamp it a masterwork. The reasons may be manifold. One of the most curious ones is the ardent intention of its creator to produce something original at all costs. He knows that originality pays, and is resolved to make use of that knowledge. Unfortunately, the new must come by inspiration and not by labor. Nietzsche says in his *Ecce Homo* that he never worked intentionally, by will or by force, rather letting come to him what nature or fate dictated, and this statement, made by one of the most original writers, carries weight. Carl Sternheim wrote, knowingly and with intention, in his own distorted syntax, omitting essential words, without, however, producing works of genius. The same can be said of Gertrude Stein. Sometimes it is difficult to judge: it appears obvious that intention had been at work, yet the circumstance does not strictly exclude the possibility of a masterwork. Paintings of Marc Chagall and Modigliani belong to this borderline class. One of the most enigmatic pieces in world literature is Joyce's *Ulysses*, let alone his *Finnegan's Wake*. It is not possible at present to predict whether we are faced with works of genius; the artificiality of them—the last sentence of *Ulysses* covers full fifty pages—is beyond doubt, and the difficulty of understanding many parts masks much of the legitimately favorable impression one can gain from an unbiased reading.

This matter of forced originality plays a considerable role in the technique of certain modern paintings and sculpture. In spite of the reluctance of some to accept modern art and in spite of the ridicule it sometimes receives, it is from its ranks that the classics of the future will be chosen. This has been so at all ages, without exception, and so it is today. One can guess, for example, that the

works of Matisse, Utrillo, Klee and Picasso will be considered works of genius in the future.

The fate of some others is not so certain, although here too only guesses are possible at present. We are thinking here of the technique of pasting bits of paper, wood, fabric and the like upon a base in order to achieve certain desired effects. The creators of such work maintain that their visions demand such a method, that the particular assembly comes closest to what they saw in their imagination. If they say so, one perhaps has to believe them, but it is hard to dismiss the suspicion that the chief *raison d'être* of the technique is to attract attention. The sincerity of these efforts is not quite obvious—Chapter 30 will deal with sincerity as a criterion of works of genius.

There is a similar situation in sculpture. Much of today's work, however grotesque it appears, will be appreciated in future times. One wonders, however, whether mobiles, sculpture made of wire and springs, will ever be thought of as works of genius. They seem too artificial to have anything to do with true inspiration.

Who can tell, however? As explained in Chapter 7, there are innovations that are in a sense ahead of the times; sometime later a genius might emerge who explores their hidden potentialities. What seems an oddity today might then become a true craft worthy of a genius.

29 HUMOR

The next feature is not as essential as those discussed so far, and not as general either, but it is, nevertheless, characteristic of many great works. Science is excluded for the moment; what we have to say is mostly about art.

Did it ever occur to you that many great works combine the features of both the serious and the humorous, tragedy and comedy? Of course, the combination is not present in every great work; it is found, however, precisely among the greatest.

A work of art is basically either serious or humorous. The man who creates it must thoroughly understand and feel his subject, he must become steeped in it. This calls for an effort, and is part of the strain of creative work. It requires concentration to a much higher degree than is needed in various professions of a noncreative nature. If the subject happens to be sad, the man must be in a serious mood while at work, otherwise the product would not be great. Imagine now that we ask from the man to mix some humorous element every so often into the serious basic mood. It means that, in spite of his concentration and fusion with the main theme, he must be able to chuckle at the very same time, and invent the humorous elements we ask from him: in other words, we ask for a greater strain than before, when he was supposed to be pervaded by the fundamental mood. Only a genius of a universal mood is able to perform a work of this kind.

The opposite, namely a switch from the basically gay to a serious mood is just as difficult.

We have tried to picture the task a man of genius is faced with in order to create a mixed instead of a uniform mood. The question then will be: Why the effort? Is it necessary for the man to create a complex instead of a simple atmosphere? The answer is, yes.

A uniform atmosphere in a work of art may be only one step

from monotony. True, a work of genius is never monotonous, even if it is uniform, at least not for a spectator versed in arts. For one who does not have quite as much artistic understanding the danger of monotony is not entirely absent. It is amazing to what extent the pleasure one derives from a work of art is magnified by this diversity of aspects, by a masterly alternation of the serious and the humorous. This must be felt rather than explained. A thoroughly serious art work is to a certain extent incomplete, and so is a strictly humorous one; only the proper mixture of the two moods lends it its artistic completeness.

There is the matter of contrast. Tragic elements are, no doubt, effective in themselves, yet let them alternate with a dose of humor, and the tragedy becomes more plastic than it was before. Similarly, a humorous work may be excellent in itself, conveying merriment and delight to the viewer or listener; if it is unexpectedly interrupted by something serious, contemplative or even sad, the delight one derives from the humor of the whole is intensified.

Not only from a purely artistic standpoint has a blended mood particular value. We have pointed out the human value of a masterpiece by means of which it spreads over the earth and survives for all time. The proper mixture of seriousness and wit has quite a bit to do with that human value of a work of genius. Life itself is such a mixture, never exclusively tragic or comical. If a work of art is to strike resonance in so many human breasts, it must be a true picture of human life, and nothing will add to the similarity more than the blended atmosphere of gravity and humor. There is no tragedy in life that would not contain elements of humor, and there is no humorous incident that would not have a contemplative message. The effect of a work of art that has the proper blend and in which the blending is executed with real mastery of the craft, not merely by juxtaposition, but by an organic fusion, is direct and powerful. Such a work may be rightfully called a masterpiece, and I do not think I am merely imagining the importance of the feature. Let me now illustrate the point by some examples from the various branches of art, and, in a way, philosophical works.

The best examples are in literature, in fact, it is from a study of that field that the idea originated. Take Shakespeare's dramas:

there is no murderous, bloody tragedy among them in which an odd character does not appear, flooding the dark atmosphere with sunshine, and drying up the listeners' tears. When reading, one sometimes misses the connection and is led to consider the appearance of these characters as artificial. An adequate direction does wonders, and seeing the play in such a performance shows the tragic and comical in perfect harmony. His *Winter's Tale* is perhaps the most perfect picture of such a union, gravity and wit being present half-and-half, while in most of his other plays emphasis is either on the one or the other. Dostoyevsky's novels are basically serious: in his *Idiot,* the chief character, Myshkin, is in many ways touchingly humorous. Molière's masterpieces are not his farcical comedies, rather those, such as *Tartuffe,* in which comedy and drama blend. Among Goethe's plays the most outstanding is his *Faust,* uniting tragedy and comedy in a manner probably unparalleled in world literature; his other, strictly serious plays, such as his *Tasso,* do not stand comparison with the former. One of the reasons that Ibsen's dramas are no true masterpieces is probably their exceedingly bleak, entirely humorless character, making them sound like scientific documents in dramatic form; his *Peer Gynt* is a lucky exception and perhaps his only work of genius. Dickens's masterpiece is *David Copperfield,* in which sadness and humor are uniquely amalgamated. He must have felt that his *Pickwick Club* in all its excellence lacked the necessary dose of serious element, and included, rather unconnectedly, such gloomy stories as *The Old Man's Tale.* The opinions on Rostand may be divided; his *Cyrano* is a masterly fusion of comedy and tragedy.

There exists works of genius in literature that have no such blend. Sophocles' and Euripides' tragedies are just that: no trace of humor. Perhaps for that reason their general appeal today is limited, although their power is of such degree that it outweighs their lack of humor. As a counterpart, Rabelais may be mentioned whose work is a satire without serious elements; still it is a masterpiece. A puzzling instance is Tolstoy's *War and Peace:* the whimsical element is practically absent, but for other reasons (see Chapter 33) it ranks as one of the great novels of world literature.

We mentioned philosophical works earlier. One might say, that

is carrying the idea too far. Great works in that field do not, of course, contain humorous passages in the usual sense of the word, rather they show a poignancy and liveliness of style and expression which induces the reader to smile. Philosophers writing in a dry, matter-of-fact manner are read by professionals only; a layman, even an intellectual, will find the reading laborious. Two readable and enjoyable philosophers are Schopenhauer and Nietzsche. Try to read the former's *Aphorisms* or the latter's writings on Wagner: you'll see what I mean. They are spiced with so much witticism, with such clever, sparkling passages of a refreshing frankness; not mincing words, on the contrary, using the strongest and most picturesque expressions, that you will laugh aloud in a manner quite unexpected for a work of such authenticity and scholarliness.

How about painting? Does our thesis hold in that art? Not to the extent as in literature, it must be admitted. The reason is obvious: a painting covers a narrower subject than a drama or a novel; compression of tragic and comic elements into a single canvas is asking too much. Yet even there the combination may be found, and not so very rarely. Van Gogh's *Shoes* and his *Chair* are pathetic, yet at the same time not devoid of humor; it is precisely this latter quality that enhances their melancholy. Toulouse-Lautrec's *La Visite* is certainly a serious subject, yet one cannot suppress a smile at the sight of the women waiting for being examined. The delightful *Apple Peeler* of Terborch comes to my mind: the mother very serious, even worried, the little girl positively comical as from under her big hat she looks curiously up at her mother. Henri Rousseau's *Sleeping Gypsy* calls forth the sensation of loneliness and desolation in addition to picturing the comic situation that could be labeled: unseen danger is no danger.

While individual paintings do not often unite the two opposing elements, they are frequently found in certain masterly series. Thus the series *Caprichos* of Goya is an overwhelming presentation of all that is base and ridiculous in humans; the eighty etchings form a forceful indictment of mankind, revealing it in its monstrous degradation and ridiculousness.

In applying the principle to music, one must realize that humor in music is not identical with the gay or lively element. The

necessity of an alternation of the serene and the gay must have been felt by composers of all times, resulting in suites in which serious and gay tunes alternate. The same technique is found in sonatas and symphonies. In Beethoven's Ninth a jubilant choral movement follows after the preceding majestically serious movements.

Humor is something different, and of a more recent origin. It is a sparkling and witty construction that makes us laugh, such as Beckmesser's prize song. Wagner's masterpiece is precisely his *Meistersinger*, a unique blend of serious and humorous motifs, and the same holds true for Strauss's *Rosenkavalier*.

Modern music deserves special mention in this connection. Many people do not have a high opinion of twentieth century music. As in a previous connection, we do not think of people with little musical understanding, whose opinion accordingly does not count much. Nor do we think of professional men; it is practically their duty to commend the work of contemporary artists. It is the average music lover we think of.

Their objections are as follows: present day music is much too noisy, void of inner content, accordingly boring; in many cases it seems nothing but the result of plain bluffing. Judged from another angle, it is the absence of musical beauty they object to. This latter point is certainly often justified. Taking such a significant composer as Bartók, it is difficult to find beauty in his six string quartets, for instance.

One point is overlooked in these objections. Beauty is not a necessary characteristic of a work of genius, and, as it may be noted, it is not listed in this essay as a chief feature of masterpieces. While it is present in many, it is not necessary. As long as other attributes are found, beauty, or melodiousness in the present connotation, may be absent. These other attributes are especially expressiveness and humor.

The first is striking in modern opera in which beauty is conspicuously absent. Take Alban Berg's *Wozzek* as a typical example: it is essentially a continuous wailing, a most expressive wailing, of course, translating Büchner's drama into music adequately and masterfully.

It is humor we are concerned with here. Besides expressiveness, humor is often found in twentieth century compositions; and an objective listener will have to admit that it is a sufficiently artistic substitute for beautiful melodies. The same holds, by the way, for literature where humor often replaces beauty: *Tristram Shandy*, while extremely witty, could scarcely be termed a beautiful work in the usual sense of the word.

The generous admixture of humor must be credited to modern composers. In Stravinsky's music the fanciful element dominates throughout: not only his best compositions, but also lesser ones, such as the *Dumbarton Oaks Concerto*, excel in humor. In the music of Prokofieff—think of his *Romeo and Juliet*—the whimsical element blends with the lyrical, a most delightful mixture. Both he and Shostakovich introduced the humorous element into the march: a highly successful and original enrichment of the phraseology of symphonic music. The works of these composers satisfy, moreover, the additional requirements discussed so far: originality and wide appeal.

30 SINCERITY

Works of geniuses cannot be judged by moral standards. Where science is concerned, facts are the main question, where art, beauty or wit. Whether either is good in the ethical sense, has no direct bearing on its value.

It may sound strange, then, if a point is raised which reminds us of just such moral values. The concept should not, however, be understood in that sense. The subject to be discussed is sincerity, a feature characteristic of a work of genius.

We might have used the word plainness instead. The man who creates a masterpiece must express his thoughts in a plain, sincere manner; he must not distort them by artificial means for the purpose of appearing more interesting, more substantial, more intellectual. By all these means, if used with an exaggeration which does not correspond to his own natural thoughts and feelings, his work loses in value.

Sincerity is essentially the characteristic of a person, yet the matter was not raised when we were discussing the man of genius because the moral nature of the feature is not important. A genius is not always a highly moral character, as explained earlier. It is his work that must be sincere. The man does not need to be sincere in all his private dealings—although often he is—but he must certainly be so when creating.

In the realm of science our requirement seems obvious: true scientific work cannot be imagined without sincerity. Thus its significance in science is not really characteristic of a work of genius because also minor works are expected to be sincere. In spite of this, we know that there is a difference in the way discoverers and scientists express their thoughts. Truly great works are simple and unpretentious, while minor ones are sometimes presented in an untrue fashion, calculated to make them appear

more important than they are. Some scientists indulge in intentionally difficult language, often with an unnecessarily complicated technical display to present a result that could be put into quite simple sentences or formulas. To go one step farther, there are discoverers and inventors who intentionally distort the truth; it would not be necessary to mention them at this place at all, were it not for the circumstance that, curiously enough, they often claim the designation of masterpiece for a work that at best is insignificant and often plainly fraudulent. This only in passing.

This question of sincerity becomes more involved in arts. The difficulty arises because it is not always easy to find out whether a work is "sincere" or not. Indeed, who can tell? Who should decide? We must rely on our subjective judgment. Opinions will be divided on the matter. It is thinkable that a work such as Mann's *Magic Mountain* may be judged differently in this respect. The style is not easy: elaborate, complex, with long sentences at the end of which one might forget the beginning. Some might say that the style is affected and unnatural, others might defend the elaborate style as concomitant with the author's own thoughts and feelings which were probably just as elaborate. Mann himself expresses his "pleasure in using correct and cultured words" in his *Transposed Heads*. It depends more or less on whether the reader is able to follow the complicated thoughts of the author. We touch here on a point, mentioned earlier, that a masterpiece relies on the receptive ability of its audience, and that proper judgments may be expected only from quarters possessing a high degree of such ability. In that sense, then, the opinion of those who consider the *Magic Mountain* sincere carries more weight than that of others.

Sincerity in art implies a direct presentation of what the creator of the work sees with his visionary eyes. The more closely he reproduces it, the more the work becomes a masterpiece; the more the man changes on the vision, the less perfect the result. It is possible that this true presentation is not always easy, chiefly because he realizes that in its original form only few might grasp it; he is then led to changes which he thinks necessary, although actually they spoil the beauty and greatness of the original vision.

One can see that it often needs self-constraint to abstain from alterations which might add to superficial attractiveness. Tchekov's short stories are masterpieces in this respect; they are told with an extreme simplicity so that one nearly wonders, did it need a genius to tell these unpretentious stories taken from everyday life? As you may note, this example stands in contrast to the previous one. This one is striking in its simplicity, the *Magic Mountain* in its complexity; they are similar in their sincerity, both being faithful pictures of their authors' vision.

There are works of art dealing with the fanciful and fantastic; one might wonder whether these could be sincere: how can a poet or painter have visions so unrealistic? Our judgment is here too harsh; it is very possible, indeed, that such works are truthful presentations. Take modern painting: some might say, by no stretch of imagination can such work be considered sincere. As we said before, the answer is by necessity subjective, since it is not given to us to look into the artist's soul. At all times there have been products of art that were attacked by contemporaries and stamped artificial. Rodin's statue, *The Bronze Age*, was accused of being a mold, hence a fraud; we know that the accusers were wrong. There is no work so unusual that it could not be a replica of the man's vision. Decisions can never be made by heated prejudice or premature opinions. Careful, impartial study will, in time, separate the true from the insincere.

Religious subjects form a vast field for artistic activity, and, it seems, one which is mostly sincere. The Bible is such a work: it came from the heart of those ancient people who composed it, and that may be part of the secret of its lasting value. Our never ending delight when looking at religious paintings may have a similar reason; even people who are not religious can, in spite of a lack of spiritual resonance, delight in those masterworks of true simplicity. There are many people today who do not need religion, and their number is in the increase. Science supplies them with all the knowledge religion could not give. Yet there is one thing that cannot be overlooked, all the beauty the world owes to the great who, since earliest times, have been inspired by faith to artistic activity. The world would miss uncounted treasures

in the absence of that faith, the source of treasures excelling in sincerity.

Compulsion was mentioned earlier as a characteristic of genius. It is related to the sincerity of the work—here is one of the relations we have been looking for! Of course, even an inspired musician might spice his composition in order to find wider acceptance by the lesser educated strata of his public. We feel pity for him for not having had the strength to withstand the temptation. Often, however, the relation is clear. An uninspired man can hardly be imagined to produce anything sincere: if he is not favored by vision, or, let us say, if there is no quasi-external compulsion active, there is virtually nothing he could be faithful to, and sincerity loses its meaning. Faced with certain ultramodern works of art, we cannot suppress the feeling that the artist must have lacked inspiration. It is difficult to call such work sincere: it must have been rather the product of sober determination.

In concluding this discussion, the importance of sincerity is illustrated by taking up a matter not considered up to this point: it is sentimentality.

Sentimentality in a work of art is a contradiction in itself. According to general notions which are basically correct, sentimentality is taboo in art. Sentimentality, sweetness, trash—these are nearly synonymous expressions. What is at the base of this instinctive recoil from sentimentality?

Everyday experience shows us that commercial art—magazine stories, illustrations, motion pictures, musical shows, hit tunes—abound in the sentimental element. It seems that those who demand that kind of art for the purpose of relaxation are attracted by the sentimental; the latter has a special and understandable appeal for them. Their demand is not for fine art, rather for relaxation, and is perfectly legitimate. People want it for amusement, for a little laugh, for a little cry. Nothing is more conducive to this desired reaction than sentimentality: it softens the heart by awakening sweet memories of the past, and tears of joy and sorrow flow—precisely what was wanted. Since the demand is great and rather lucrative, those who wish to benefit by it will make use of all the sentimentality they are able to muster. Products of this

nature have only rarely artistic value, and so we associate with a great work of art the absence of such sweetness.

Analyzing, however, certain works of art, we find that some sentimentality had crept into them, without inducing us to rejecting the works in question. It appears, then, that there is something in those works counterbalancing the sentimental element otherwise frowned upon. It should be stressed that we do not condone it; on the contrary, we are convinced that a great artist instinctively avoids it. Yet exceptionally it can be tolerated. This is because the author or composer, as the case may be, truly and sincerely felt so when including the sentimental passages. Whether or not the trait is sincere is, as said before, partly a matter of conjecture and can be judged only by a study of the life and character of the man. Yet such is the power of sincerity, of our feeling that the work is sincere, that it may even excuse and make acceptable a trait we otherwise do not like.

Let us mention an example in this connection: it is a controversial case, and there are many arguments both ways. This example is the music of Gustav Mahler. His symphonies, lengthy and impressive creations, abound in sentimental passages, and there are many who on this account dismiss his work from the realm of great music. It must be admitted, one can only wish that Mahler had presented those passages in a more restricted manner, as Richard Strauss did whenever he included such elements in his symphonic work. Yet Mahler enlarged on these passages with great consistency. Now, we know a great deal of his life and his nature; we know that he was an unhappy, melancholy man, very much dissatisfied with his lot, "mir war auf dieser Welt das Glück nicht hold," emotional, continually disturbed by forebodings of his death. It is only natural that with such a disposition he was often impelled to vent his mood in sentimental passages which he quite certainly did not do in order to win the acclaim of the masses upon whom he could not count anyhow.

31 POWER

In pondering the question that occupies us here: what makes a work of art great? a seemingly vague but not unimportant feature may be mentioned. A great work of art has what could be called power, or, if one prefers, strength. A powerful work is one that literally towers above others and humanity as a whole. It overwhelms the viewer or listener with its expression of might, and shows him his own smallness, yet in a manner that does not call for dejection, rather for elation. There is no pride or conceit in its power; it is majestic and calm, entirely impersonal, similar to that of the sun and the stars which impress the viewer with a quiet, detached might, not intended to humiliate, rather elevate him to the level of their own height, if such were possible. A masterpiece that impresses us with such power must be the work of a genius—we feel it with certainty. Many of us in our leisure hours try to imitate such works by painting or writing as a hobby—fair as such an imitation might turn out, it will invariably lack just that feature: power. It is the highest, the utmost mark of a masterpiece that cannot be produced, in spite of best intentions, by the most diligent study, by the most conspicuous talent.

Power, while in no way proud, is uncouth, rugged. Its indifference toward humans may approach a certain rudeness. The level of a powerful work is so much higher than that of humanity as a whole, its unconcern for our own level so obvious that it cannot be obstructed by considerations of our frailties and weaknesses: hence its frankness which is sometimes rude. This feature is common in all powerful works of art: in Goethe's *Faust*, Dostoyevsky's *Possessed*, the *Odyssey*, Beethoven's *Kreutzer-Sonata*, Rodin's *Burghers of Calais*. A powerful work is not for a person with weak nerves, unless his receptivity is weak too. I said that a powerful work is not inducive to dejection, yet it can be disturbing,

and to no small degree. The *Kreutzer-Sonata* disturbed another genius, Tolstoy, so much that he finally had to unload his burden by writing his novel of the same title. Some unkind words were said earlier of Ibsen, which may be justified; yet he certainly has power, even if he lacks other features, and his *Ghosts* can cause a person some sleepless nights. So can Strindberg's *Death Dance.*

Power is not necessarily related to length or complexity, although they often go together. In principle, works of even miniature size may be powerful, in fact, because of the absence of other complicating elements, they offer a good opportunity to study that feature. Some short poems are good examples, such as Whitman's *Of Persons Arrived* and *Miracles;* they are so brief that practically nothing else is in them except power. Some of Chopin's Etudes and Preludes belong here; listening to them one feels as if thunderstruck, under the spell of a superior power of great intensity. Barlach's *Notebook Drawings* are only sketches, not quite complete, fixing for future reference impressions of the artist during his travels. Most consist of a person, a peasant woman or a man in a characteristic pose. One does not tire to study them, and if you asked, what is in them, we could only repeat, nothing, except power. One cannot describe the feature better than by saying, it is abstract strength, devoid of frills, even of beauty; a glance into nature in the rough.

Not all works of genius are powerful, in fact, many are just the opposite. There is an interesting division of masterpieces into two main groups, and it is only of one we have spoken. The other group is characterized not by power, but by grace; again we use a word that does not describe the meaning completely, and is applied in lieu of a better. This irksome matter of words has been hampering us on various occasions: we have been forced to use certain words as a means of expressing concepts for which strictly speaking new words should have been invented. We did not, since new words are extravagant and presumptuous. On the other hand, when using old words we must learn to comprehend them in their new shade. Quasi-external force was such a word, sincerity another. Here we say, grace, meaning a work that is delicate, accomplished, elegant.

How is it then, are there really two kinds of masterpieces? The only answer we can think of is, yes and no. There are two kinds, the powerful and the graceful, there is little doubt about it. Yet one might wonder, are the two of equal rank, or is one a few steps above the other? Opinions on this point may be divided; we are inclined to think that the powerful ranks higher than the graceful. So you see, there are two kinds of masterpieces, unless we want to be very rigorous; we then would have to say, there is only one and that is the powerful.

A graceful masterpiece: what a vista opens up before the unbiased observer! We think of Heine and Rostand, Mozart and Debussy, Raphael and Monet. None of these could be rightfully thought of as particularly powerful, still the greatness of their work will hardly be questioned. Power, indeed, is not necessary in a work of genius, some excel in their counterpart, may I say, in the feminine. The drama of the Duc de Reichstadt would be written quite differently by Sophocles, if he lived today, since the subject contains many powerful elements; the sickly Rostand saw rather the touching, the weak, the feminine in the subject and fashioned his drama accordingly, like lovely Venetian lace. It is the personality, the viewpoint and inclination of the genius that decides which aspect of a subject he sees, and which, accordingly, he executes. His special abilities, of course, play a decisive part.

A special feature in graceful art, typical of the group and less frequent in the other, is perfection of form. Power is apt to brush aside such matters as perfection in style, rhyme, rhythm and harmony. I mentioned Ibsen before: one certainly cannot praise him as an exquisite stylist; the style of his plays is crude, matter-of-fact, utilitarian. What mattered to him was the thought, the principles, bursting forth in search for the truth, without consideration for beauty. Perhaps to a lesser degree the same holds true for Euripides, and that pinnacle of power, *Faust.* Against these the plays of Rostand or Oscar Wilde, while far from powerful, are rounded in their form, style and metre; there is no slip in the latter, no concession to surging thoughts, as found in works of power. The form of Haydn is perhaps the most perfect in classical music, while Beethoven could not be halted

by such considerations when coping with the torrent of his forceful ideas.

Another attribute of a work of genius is refinement, good taste. This is not universal and more often found in our second group, the graceful. In works of power, refinement in the narrow sense of the word is sometimes missing, yet not to the detriment of the work. Many great works of art are strongly erotic, to a degree not acceptable to a person of a too refined taste. We cannot go along with these persons; *nihil humani a me alienum puto*, trusting that we have the majority of art lovers on our side. This matter will be discussed in greater detail in Chapter 34.

An even stronger violation of the requirement for refinement is found in certain works, elaborating here and there on physiological processes not usually thought of as subjects of literature. Yet, paradoxical as it may sound, even such passages may contribute to the value of a work sufficiently armed with what we called power. Benjamin Franklin, whose genius is revealed by his universal mind and literary output that survived until today, did not find it contrary to his dignity to write his satirical *Letter to the Royal Academy of Brussels*, suggesting the mixing of certain ingredients to our food in order to scent its gaseous decomposition products. Joyce in his *Ulysses* enlarges on Bloom's sojourn in a secluded place with a realism and melancholy humor that not only preclude any objection to the passage but make it highly enjoyable reading. Rabelais narrates in his *Gargantua* how the latter as a young boy told his father with pride about the various and rather numerous ways he had invented for the purpose "de me torcher le cul." We might add to the list Verlaine's risqué poem *Lorsque tu cherches tes puces*.

What, then, is refinement, and what is its value if it is not a necessary ingredient of a masterpiece? Refinement in art can be a delicious asset, providing the listener or viewer with a purely physical pleasure, in addition to the spiritual pleasure he derives from the artistic value. There is reason for calling it good taste because it may give pleasures comparable to that given, let us say, by a luxurious dinner on a terrace at Lake Como. We are thinking of Haydn's quartets, the prototype of elegance in music; one can

understand that he composed for the artistocracy of his time. The same impression of refinement is conveyed by much of Chopin's music, for instance, his nocturnes: luxury par excellence, perhaps too refined for our realistic world, and just for this reason doubly appreciated. In painting, Ingres's *Comtesse d'Haussonville* and David's *Charlotte du Val d'Ognes* are perfections in good taste, remnants of the lost world of aristocracy, decried today but none the less exquisite. While characteristic of the graceful group, powerful works can also display this refinement, rather striking because of the contrast: Rilke's poetry or Anatole France's novels come to mind when thinking of these rarities in art.

32 COMPLEXITY

The majority of masterpieces is complex. Let me borrow a word from the mathematicians, and say that masterpieces are mostly multi-dimensional. Instead of following one particular path, they go at the same time in other directions as well, now this one now that dominating. This, of course, makes understanding difficult for the uninitiated and inexperienced. It was explained that while a masterpiece transcends geographic barriers, it is still restricted to appreciation by the educated strata. Here is one of the reasons: the multi-dimensional character of the work requires special ability on the part of the viewer or listener to turn his attention in various directions, not forgetting at the same time what was underneath or in the background; these continual turnings may easily become a strain, marring possible enjoyment.

This complexity may be exemplified by a Wagner opera which by its visual aspects, orchestration, motifs, vocal scores, complicated text and philosophical implications requires quite a study on the part of one who wants to derive maximum enjoyment from the work. Another example are the friezes on the Parthenon on the Athenian Acropolis: with its numerous fighting scenes between Lapith and Centaur, equestrian groups, and sacrificial processions it offers little to the superficial observer and can be appreciated only through detailed study. The same holds true for scientific masterpieces. The real value and beauty of Maxwell's electromagnetic theory of light can be perceived only by means of strenuous study, particularly if its further extension by Hertz, Lorentz and Einstein are to be encompassed. The enjoyment of great masterpieces cannot be acquired cheaply.

This complexity, although fairly general, is not a necessary feature of a masterpiece. There are some characterized by re-

markable simplicity. By making use of the previous terminology, one might say that some are one-dimensional. They follow one particular path and do not deviate in other directions. Quite often such simple products do not comply with our various requirements pertinent to a work of genius, and as a result they cannot be given consideration among works of art. We are interested only in those works in which simplicity is evident together with the presence of our other requirements. Generally, such works are not too numerous, and are, therefore, the more interesting. Because of this one-dimensional character they can be enjoyed much easier even by the uninitiated.

Folk products belong in this group in the first place: their survival in time, spread over continents, their originality and sincerity cannot be questioned. Folk songs belong in this category, as well as folk tales, such as those collected by the Brothers Grimm, truly immortal pieces, and folk poems, as those assembled by Arnim and Brentano in *The Youth's Magic Horn.* The creators of these are unknown, they remain anonymous like the old Greek and the medieval ecclesiastic sculptors. The quality of folk products varies considerably, but part at least of the anonymous creators were, no doubt, men of genial caliber, while another part were probably excellent imitators only.

Transition from one- to multi-dimensional works of art may be studied by means of folk songs. As soon as they are touched by a composer, the number of dimensions increases, and they become complex. This happened to the Hungarian folk songs set to music by Liszt, Brahms, Kodály and Bartók. Particularly in the music of the latter the original simple tune has entirely lost its simplicity and easy understandability. Variations in classical music, based mostly on simple themes, offer further objects for study of this increase in complexity.

Leaving the domain of folk art, we come to the intriguing territory of simple works created by known masters. In literature a good example is *The Pickwick Papers.* It is really a series of simple and humorous incidents, put into the form of a novel, yet the artistic value of the work is obvious. The humorous picture stories, written and painted by Wilhelm Busch, offer another

example. In music the classical operetta may be quoted in its finest representations, such as *The Bat*, *The Mikado*, and *The Merry Widow*. In a similar vein we may quote the waltzes of Johann Strauss. One must be careful in assessing works of this nature, since they are often only one step away from the ephemeral. The individual taste of the judge will, of course, shift the limit in either direction.

Are there simple works in science? There are not, although there are some facts and laws that appear simple at first sight. Such are Faraday's law of electrochemical equivalents, Newton's law of gravitation, the law of Boyle and Mariotte concerning the pressure of a gas. However, the simplicity of these relations is deceiving; at closer inspection, or when one goes into greater detail, simplicity disappears. There is no analogy with arts in this respect.

33 MIRROR OF THE TIMES

The next viewpoint is in some contrast with another matter plentifully emphasized in Chapter 27. This latter is the timelessness of a work of genius. In contrast, let us talk of the connections of such a work with its times.

Nothing could be imagined that is not in some way rooted in the times whence it originates. We live in our times, surrounded by it, captured, in a sense; it would be impossible, inhuman to try to escape its influence. And from that influence not even a genius is exempt. There have been attempts to actually derive the phenomenon genius from sociological considerations. We cannot go along with the thesis that genius is simply an outgrowth of the times.

The relation between arts and the times is based on each period having its peculiar features, expounded in detail by students of history, features of a cultural and economic nature. In this sense each century of the past three thousand years is unique; changes are sometimes gradual, sometimes more abrupt. We all feel as if these changes were especially fast in recent times; this may or may not be so, perhaps at all times people have felt the changes pertinent to their own time rapid. Arts, as well as philosophy, are a picture of this aspect of the times: well known with respect to such main periods as the ancient times, medieval ages, recent history and the present. These can be subdivided into shorter periods. The art of the eighteenth century, the rococo, is that of refinement and luxury, that of the early nineteenth century is that of idealism and romanticism, turning in its latter part to realism and naturalism, while our present art is a faithful mirror of the technical age. The relation is intricate, art not only being the result of the times, also vice versa: great writers play a con-

siderable part in changing the times, as did Rousseau, Voltaire, Goethe, Marx, and, as it appears, Schweitzer.

This close relation between times and arts has its peculiar danger for the profession, and that is precisely the reason that we can talk of a profession in a realm as elevated as the arts. Most people are interested in the conditions under which they spend their lives; they are, accordingly, willing to take in and digest a certain amount of art, if and only if it refers plentifully to the daily topics around them. This situation makes it possible for talented men to actually make a living by practising arts as long as they restrict themselves to these current topics. The danger alluded to consists in some of these talented men's wasting their efforts in making only money instead of creating works of art. While it would be exaggerated to lament loss of masterpieces due to sacrifices at the altar of the Present, misdirected efforts of talents can certainly be traced to them as we know only too well from the trash men of all times, ours not excluded, have produced in all branches of arts.

This danger exists also for the genius, and the question is, in what manner does he escape the temptation? There are two ways open for him.

One avoids the pitfall by deliberately turning away from current subjects. Some take their flight to history and choose subjects from former times or use legendary material. There is a vast field where they can search for their untimely topics. Another group of artists choose fantastic subjects; we have those who dwell on the fanciful and imaginary. There are fine works of this kind, and if their creators do not always find a large audience in their own times, they sometimes survive for posterity, provided they fulfill the other requirements. Poe's and Hoffmann's tales fall into this group.

Art works of purely historical or fanciful nature are not as many as it may seem at first sight. Many artists who choose remote subjects are not really escapists from the dangers of the Present. In reality they picture their own times in an allegorical or satirical vein. We might quote here *Gulliver's Travels* or the *Divina Commedia*. And with this consideration I am coming to the main point,

the second way in which truly great artists avoid the pitfalls of actualities.

The greatest does not turn away from his time, he faces and absorbs it. His achievement consists of creating an original, individual work that at the same time is a mirror of the times. This union may be considered as one of the chief features of a true masterpiece. It needs genius to achieve it. There are others who, knowingly and deliberately, in the hope to be appreciated by later times, carry out a work of this nature. Unfortunately, such man violates our requirement of spontaneity and sincerity, and his effort will never become a masterpiece. The idea, the impulse must be direct and natural, not contrived, in order to lead to anything of lasting value.

Such a work will, indeed, be appreciated by posterity. It offers more than a mere historical document because it is lively and vivid. Our main source of the details of life in past epochs is our heritage of art works: epics, dramas, novels, paintings. From these we all, not only students, can obtain much information on the habits and customs of former times.

Take the Odyssey: what a picture of the early Greek period it represents! Or Dickens: Old England stands vividly before our eyes, no detail missing. And with what pleasure we absorb that wealth of knowledge! Maupassant and Balzac tell us about the strange, in some ways not illogical, morals of married life in Paris in the first half of the nineteenth century, and that with a vividness and precision no scientific treatise could surpass. The value of such art work becomes striking when compared with the countless novels that have been written on current matters, as mentioned before; books of merely journalistic value, read only for a few years. Even such work as Galsworthy's *Forsyte Saga* does not hit the mark, and it could hardly be called a masterpiece. Although an excellent picture of London at the turn of the century, it lacks —what? I believe, power, a feature stressed earlier. Proust's fifteen volumes are of a different caliber; while a picture of his time, it contains a wealth of beauty, philosophy, and an array of psychological portraits that seem timeless. It is this remarkable union of timeliness and timelessness that constitutes the real masterpiece.

What about music, the greatest of all arts? It has no subject in the narrower sense. Still, music can tell us a great deal about the times it was composed in. It needs imagination and a musical understanding to interpret its international language; equipped with these, a listener to Mozart will be able to form a picture of the atmosphere of the eighteenth century. The wealth of madrigals we possess from the end of the medieval ages shows us the spirit of the times, far from dreary, as sometimes supposed. Today's music of Bartók, Stravinsky and Blacher will give anybody with ears two hundred years from now a descriptive picture of our age of machines.

Great painters reflect their times without ever becoming mere illustrators. How close that danger is, is shown by the borderline cases that barely escaped it and were able to cross the border into the realm of true art, like Toulouse-Lautrec or Daumier. In such instances the individual taste of the observer plays a role in assessing their proper place. It may be stated, however, that the two achieved the difficult union in a masterly manner.

In science the thesis of a masterpiece being a mirror of the times finds only limited application. An exception is philosophy of which mention was made before. Not only have great philosophical systems affected the times, but they serve also as mirrors of their periods. The system of Socrates gives a complete picture of ancient Athens, and so does the system of Thomas Aquinas of the scholastic age.

It is different with natural sciences, notwithstanding they are strongly rooted in their times, as explained in Chapter 2. Their implications are, however, too specialized to cover the entire spirit of an epoch in the sense as was shown for arts and philosophy. Although Shaw made excellent use of Newton's personality in his *Good King Charles*, it would seem forced to consider Newton's mathematical system as a mirror of the seventeenth century.

34 SEX IN WORKS OF GENIUS

We have come to the end of discussing the essential features in a work of genius. The discussion may be rounded off by elaborating on a particular subject pertaining to masterpieces of art.

In works of art the frequent occurrence and sometimes predominant role of sex, not only its spiritual but rather physical elements, may be generally noted. Now, there seems to be an unwritten law, or rather principle in esthetics, according to which the open presentation of the physical aspects of sex is not in accord with good taste. The importance of this latter was stressed in Chapter 31 on power in works of genius, where it was mentioned that the matter would be treated in greater detail later.

The question to be answered at this point is the following. It is a fact that the physical aspects of sex are presented openly in many works of art, in those that are generally considered of the highest caliber. On the other hand, such a presentation is supposedly in bad taste. How can this contradiction be resolved? Obviously there must be a logical error somewhere in the reasoning above.

The question to be dealt with in this chapter is then of a kind in some way opposite to those discussed in the foregoing chapters. Up to now we have asked, what features are essential in works of genius? Here now we have to answer the question, how can a work be a masterpiece while incorporating a seemingly undesirable feature, namely a strongly sexual flavor?

The moral aspects of the problem will not be touched upon in the following. Morality as such has little to do with the man of genius, as emphasized in Chapter 13. Here we have the counterpart of that thesis: morality has equally little to do with a work of genius. It is then rather from the esthetic angle that

this problem, the inclusion of the erotic in works of genius, will be treated.

By its very nature the subject is restricted to literature, painting and sculpture. Music, too, will be dealt with, although only to a lesser degree, since its expressiveness is never straightforward, merely suggestive.

There are artists and writers who deliberately avoided the pitfall. This is easy for a painter; even the complete shunning of erotic subjects leaves many fields open for his activity. In this manner Corot, Monet and van Gogh, for instance, concentrated largely on landscape painting, and, to a smaller extent, on portraits. A poet has no difficulties, either: there is little eroticism in Horace or Stefan George.

It is a different story with a writer. This is because a novelist deals with all aspects of life, quite often with the entire life story of a person, and in this manner avoidance of sex is not an easy matter. Some writers, however, managed to steer clear of all temptation. It is rather obvious in such cases that they did so intentionally, with great determination not to have their work contaminated in any way. This situation on occasion is not without humor.

A typical case in point is Dickens. In his lengthy novels love is treated with utmost caution. Description of sexual relations never go beyond superficial touches, and the maritime bliss of loving couples appears to be exclusively spiritual. Quite possibly this attitude of his is merely a Victorian trait; in any case, his great works, like *David Copperfield*, are typical works of genius in no way tainted by sex. The meticulous avoidance of those elements in novels of such large scope is in itself a feast of genius. They do not, however, offer material for further discussion of our particular subject at hand.

The greatest part of masterpieces in literature and a substantial part in painting follows a different path. They do not eliminate sex entirely, treat it rather with discretion, brevity and wit. This is a compromise solution of the dilemma: sex enters wherever it seems natural, yet at the critical moment the writer stops abruptly or merely indicates briefly or occasionally by a witty turn the

sequence on which to enlarge would be superfluous or even cloying. This superfluity or surfeit is at the root of the principle of leaving sex out of a work of art, of a work that claims to be a true artistic product. The principle holds, by the way, in other fields too, not only in that of sex. It is the principle of presenting only the necessary, not to overdo; it holds quite generally in art, and also in science, although it is often unheeded by masters who know exactly how to overdo, such as Bruckner or Proust.

The technique mentioned above thus solves the problem, and results in the most delightful pieces in art, true works of genius. An instance of these literary delicacies is the closing episode, including the last unfinished sentence of the *Sentimental Journey*, and, in a similar, although more sensual vein, the discourse in French on love in the *Magic Mountain*, ending with the enigmatic phrase of Madame Chauchat: "N'oubliez pas de me rendre mon crayon."

There are many instances in the French literature which follow this prescript; the French, with their inherent wit, are masters of this kind of presentation. The manner sex is treated by Anatole France is perhaps the most genial of this genre.

A variant of the method is the dry, matter-of-fact way as practised by Shaw. Sex is certainly a predominant element in nearly all of his plays, yet it is handled so coolly, so unemotionally that the physical element, although obviously active, somehow seems to have evaporated. Also a mark of genius.

Among painters who presented sex in a witty or sketchy manner let us mention Henri Rousseau, also Matisse in his drawings of women.

We now come to those artists who have, quite intentionally, no restraint in this respect, who violated the unwritten law of reserve, yet who succeeded in producing works of genius. The widest field is, of course, painting, but, as we shall see, all other arts offer possibilities in this regard, even music. Painting, however, is the domain *catexochen* that one has in mind when thinking of the matter. Painting is meant for the eye, and is for this reason the most direct of arts. It has a certain distant relationship to photography and in this latter, when representing erotic subjects,

the limit between artistic and nonartistic products becomes very fluid. Quite certainly, a photograph, even at its best, can never be a work of genius, and so it cannot be compared to masterpieces of painting. Yet the kinship between the two domains exist, and this explains why also in painting the limit between art and possible vulgarity is sometimes difficult to draw.

A relatively simple criterion that permits to make a decision is the existence or nonexistence of all other features of a work of genius. If they are present, and abundantly so, including appeal in space and time, originality, humor, power, complexity, then the exhibition of the sensual cannot have an adverse effect on the general impression the work creates, in fact, might even heighten it. If, on the other hand, the essentials are scant or even missing, then the work is certainly not a masterpiece, and will probably not survive.

There is no point in being hypocritical when discussing these matters. It must be admitted that erotic subjects presented in masterpieces of art can and do arouse an observer's sensual interest, however great a connoisseur he may be. Kant's definition of the beautiful as a thing that pleases without awakening personal interests is not easily applicable in these cases because artistic appreciation and personal interest may go together without detriment to the first. In this fashion a gourmet may look at a still life of apples of Cézanne, thinking at the same time of the excellence of the work and that of the fruit. This reaction is so natural that it cannot be suppressed. There are people who go to an art institute mainly for the purpose of satisfying their various associations awakened in contemplating a still life, the portrait of a child, a seascape or a nude. This circumstance can in no way be raised as an objection to the artistic value of those works.

Painting of the nude is an art many centuries old. The sensual element dominates in many masterpieces of Rembrandt, and is prevalent in many of the French masters, such as Renoir, Degas or Courbet. Very striking examples of the erotic are found in some works of Picasso, such as his *Embrace.*

Sculpture takes an exceptional position inasmuch as the human figure lends itself to that art best in the unclothed form; a dressed

human statue has an unnatural aspect. Greek sculpture is thought of as perhaps the greatest art produced by human genius so far, notwithstanding few figures are found draped. A metal drapery, thought necessary by Roman censors, partly covering the Aphrodite of Cnidus, a copy after Praxiteles, must be considered detrimental to that work of genius. And the partly strong sensuality of Rodin's work, such as his *Eternal Spring*, is amply counterbalanced by the elements of grace in some, power in others.

Literature offers many instances of erotic presentation, and the judgment concerning greatness of the work is not always easy. Perhaps the bulk of the writer's or poet's work might help in judging the merits of the work in question. Thomas Mann's considerable reticence in matters of sex descriptions was mentioned; the *Felix Krull Memoirs*, exceedingly frank in this regard, is an exception; considered together with the bulk of his work, it can rightly be judged a masterpiece. A similar case is Balzac's *Contes drôlatiques*, when viewed from the angle of his total powerful output. *Lady Chatterley's Lover* was discussed in Chapter 9 from another standpoint; the various assets of that work assure its literary value in spite of the uninhibited description of sex relations.

Poetry, often characterized by refinement, can be just the opposite. Such is the Dafnis series by Arno Holz, untranslatable pastoral poems in the style of the seventeenth century, dealing with matters of love in a rustic, outspoken manner. A special gem in world literature for one who is not prudish.

How does music fit into this discussion? Is there such a thing as eroticism in music? There is, although only through a veil that is not too transparent. To many listeners there is no such problem. Besides, some of the instances belong in the realm of opera, which is dramatized music; it is then not easy to decide which of the two sides gives the impression of sensuality.

Beethoven's *Kreutzer Sonata* was mentioned in another connection as a work to which Tolstoy objected: to him it was music that incited the listener to lust. Not many will share the great writer's opinion, explainable only by his strongly puritanic ideology.

Some among the masterpieces in the realm of opera are, however, strongly sensual. Such is Strauss's *Salome,* which actually raised a scandal at the early stages of its career. Not only the plot, also the music in itself, especially Salome's dance, is sensuous, as a listener with musical understanding will notice. Perhaps a similar instance is the Venusberg scene in Wagner's *Tannhäuser.* The peculiar character of these compositions is observed better by listening to the two scenes mentioned without watching the stage, for instance, in a concert performance. One particular musical element that, possibly due to insinuation of its physiological analogue, possesses erotic coloration is the properly employed chromatic scale, descending or ascending in half-step intervals. This is the element Saint-Saëns made use of in Delilah's fatally seducing love song in his opera *Samson and Delilah.*

This discussion of the sensual in music reveals a particular aspect of the problem, not touched upon so far. It might seem that finding the sensual in music is a forced affair, not at all obvious; that it needs a sexual magnifying glass to find these passages, entirely harmless otherwise. There is a piece of truth in this. By analogy one might say that the situation is the same in painting and literature. This again is true—partly. An observer, deeply absorbed in the overwhelming artistic qualities of a work of genius, such as Giorgione's *Tempest,* might be unaware of the sensual element seen only by the evil eye of a lewd. Maybe. But then such an observer might be excessively frigid.

VI

CONCLUSIONS

35 PICTURE OF THE GENIUS

A few words of recapitulation will be in order. Let us see whether we have been at all successful in answering the question, what is a genius.

We divided the problem into two main parts, that of the man of genius and that of the work of genius; the two were discussed separately. It was realized that theoretically the two formed one unit, and that, if we knew all the pertinent facts, they would not have to be discussed separately because the features of the work would then be deducible from the features of the man. Since we are far from that status, it appeared promising, for the purpose of obtaining a possibly clear picture, to look at the matter from these two different viewpoints.

The two viewpoints yielded, indeed, results that, though not strictly corresponding, not altogether derivable one from the other, contain several features of the man and the work that do correspond.

Both the man and the work consist of independent features: this is our chief premiss. All combinations of features are possible and actually exist. Some features are more essential than others. From this, a definition of the genius follows: a genius is a man in whom all or nearly all single features are combined. Ten such features were discussed, which, of course, does not mean that the ten are exhaustive. They happen to be those that came to our mind, and they probably are the essential ones.

The fundamental features of a genius are the following: the existence of a quasi-external voice, a call, that practically forces the man to perform a predestined duty, whether he wishes it or not; a high degree of unselfishness, resulting in the performance of that duty not primarily in his own interest, often to the detriment of his personal welfare; a certain compensation for his

steady, strenuous creative work by a dim foresight of an immortality in his works, accompanied by an actual longing for that permanence of his creation. The features described are of an abstract nature, giving a picture of genius based on his mentality.

This picture is complemented by other elements of a more concrete nature, concerned with the abilities of the man. These are: inventiveness, forming the basis of all creative work; a mastery of the craft, which alone enables the execution of any project the design of which has been drawn by invention; a universal mind that does not adhere to a specialized field, covering rather all matters concerned with human endeavor; depth of perception, enabling the man to react, mentally, with great intensity on all impressions from the outside world; a memory which makes it possible for him to make immediate use of his entire past experience, personal or acquired by study, without which his past would be lost for his creation; a high degree of perseverance, bordering on obstinacy, to overcome all the obstacles in his path, usually great in number; and finally prolificness, indicative of his vast inner resources which sometimes seem inexhaustible. These features of ability, added to those of mentality, give a reasonably good idea of the essence of genius. The picture was further supplemented by other discourses on the relation of genius to society, sex and personal health, all important determining factors of his activity.

I do not know how satisfactory our picture of a genius is; whether it is sufficiently informative and visualizable. I can think of more direct pictures. To mention but one: Rodin's plaster statue of Balzac gives a direct and arresting idea of a genius: the advancing posture, with the arms hidden under the folds of the garment, the searchingly pained expression of the face, the frightening, majestic eyes and brows: all combine to give in one statue more of the essentials, if not of the details, than the lengthiest discussion could provide.

This is perhaps a good illustration of the supremacy of art over analysis, or, if you wish, science, to which we will come back a little later. A work of art possesses a directness and conciseness that no analysis can match. While the latter can be studied only

by a few, and then only at the sacrifice of considerable time, the former is accessible to many and is effective in such a short time that, without the danger of triviality the effect can rightly be compared with that of lightning, the more so as the comparison conveys also the element of power.

The picture of genius, as developed, contains an essential restriction, mentioned severally, and, because of the disagreement it might meet with, worth a brief recapitulation. This is the restriction of our concept, genius, to men of arts and sciences, with the exclusion of famous people in the realm of statesmanship, military operations and business, typified, for example, by Gladstone, Hannibal and Carnegie, considered by many as geniuses. The exclusion is justified as a result of our picture of a genius, comprising unselfish motives with an idealistic attitude. This cornerstone of our model is missing in the group mentioned, its action being motivated chiefly by selfish purposes and realistic causes. An opponent might say that the exclusion shows our picture to be incorrect since the greatness of the group is generally taken for granted. We do not wish to argue with possible opponents. Let us state merely that our picture with its consequences appears to us truthful and consistent, as will be also evident from the work of genius to be discussed below. The same exclusion will follow from those considerations, based on an independent picture. In a more mediatory tone, however, it may be said that the picture developed is one of viewpoint, neither correct nor incorrect, as a mathematical theorem would be. There are also practical considerations as to the width of a concept, such as the space available for its discussion.

Describing the work of genius, or what is called a masterpiece, we followed the same principle, establishing a number of features, each independent of the others, and requiring a combination of all in order that a work could be called one of genius. Two essential and abstract features are found in this search: a high degree of universality, evoking resonance in people all over the earth, irrespective of the cultural differences between their country and that of the work; and a high degree of universality, resulting in a survival of the product for future times, a requirement

based on our experiences with past achievements—later we will add a word concerning these future times.

To this picture we must add certain characteristics of a more concrete nature: originality of the work, setting it apart from others of a more repetitive or imitative kind; a strong dose of humor, found in most masterpieces, remarkably even in those of a tragic fundamental tone; sincerity, or, if you prefer, naturalness, as against artificial means, sometimes necessary as a spice, yet never abundant in a great work; the elusive feature of power or strength, impressing the viewer or listener with a nearly superhuman creative force behind the work; complexity, or multidimensional character, differentiating a great work from the light or one-dimensional kind; and finally a quality involving portrayal of the times, of value for reconstructive purposes in later epochs. A work combining these essential features we now call a work of genius; at the same time the picture thus obtained permits a second definition of the man, genius: a genius is a man able to create a work of the kind described.

By logic, the two definitions of the man must coincide, if they are correct. A complete casual correlation between the two, as pointed out, is not obvious at present, mainly because of our incomplete knowledge of the ways the brain works. It was emphasized that biochemistry is still in its infancy. In two thousand years our present knowledge will be judged as we now judge that of two thousand years ago: Lucretius' work on nature and man, esteemed today chiefly for its poetical value, was then technically the best possible, compatible with the scanty factual information available.

Several points of casual correlation between the two pictures given can be discerned. The universal appeal of a masterpiece has its roots in the universal mind of genius, although the two concepts are not identical. The universal appeal of the work is explained by its reach into the depths of the human mind and life. A further point of correlation is inventiveness in genius and originality of the work, a point in which correspondence is nearly perfect. A third relation may be found between the compulsory call and sincerity of the work. These examples justify the necessity

of our twofold search, yielding pictures that at present can be brought only to partial overlap.

We mentioned that our exclusion of a substantial group of famous people is justified also by the second picture. Their achievements are short-lived: the military victories of Charlemagne or the diplomatic maneuvers of Metternich have left no trace upon present world conditions; their achievements are recorded only in history and such art works as deal with their lives, like the *Roland Song* and *L'Aiglon.*

Thinking over what we have discussed, it will be noticed that more was said of art than of science. This is not surprising, one might say, since science requires more specialized knowledge than art. True, and precisely this difference is indicative of a proper assessment of the two realms in connection with the problem, genius. Attempts of excluding specialists from the domain of the genius were mentioned, also that we would not go along with such extreme opinion. It is of interest, however, to point out here a significant difference between the two domains as far as our problem is concerned. One of the main criterions of a masterpiece is its deep-rooted hold on humanity as a whole. Scientific facts do not possess human characteristics, do not directly touch human beings, disregarding secondary technical and medical benefits of a utilitarian value. From this stems the restricted interest in pure science compared with art, in addition to the need of specialized knowledge. The absence of the human element also influences the permanence of the work: the ancient tragedies are appreciated today essentially in the same form as delivered to us through the ages, whereas only fractions of science of the ancients can stand today's scrutiny. The same fate awaits the great achievements in art and science, particularly theoretical science, of today two thousand years hence.

In a moderate fashion we have thus succeeded in shedding some light on the problem, genius. Our twofold view makes it possible for us to predict with some probability whether a contemporary work will survive. From what was said, such a prediction is not generally possible, since we do not know the artistic taste and scientific status of future times. Errors are very easily made. Such

a master as Hoffmann talks in his *Old and New Church Music* with equal admiration of Haydn, Hasse and Naumann. The first is highly appreciated today, the latter as good as unknown. Similarly Poe, a true connoisseur of literature, talks in his *Quacks of Helicon* with equal depreciation of Longfellow, Bryant, one Morris and one Willis. It is impossible to foretell today whether Shaw, Mann or Sibelius will be considered great two hundred years from now; personally, one might feel sure of the first, and be in doubts of the last.

Utilizing our results, one can try to make a more accurate prediction, free of personal taste. First, one can apply our various criteria to the works of present day masters in order to make an estimate of their true value. In attempting this, we find them well satisfied by the plays of Shaw and the writings of Mann, whereas a lack of originality, humor and perhaps sincerity may be noted in the compositions of Sibelius. If this method should not give clear results, as is often the case, one might resort to a study of the personality of contemporary men, which in most instances is well known, and draw conclusions from the man to the quality of the work.

Even this latter method is, of course, far from being infallible; it is, however, a useful help in making predictions. Thus, continuing the previous illustrations, it can be said that the personalities of Shaw or Mann appear to satisfy the criteria of men of genius, except for the mercenary nature of Shaw which is a black mark against him. As for the case of Sibelius, he seems to have lacked genuine call, the chief criterion of genius, judging from the large amount of light music he had composed for quite a time before turning to symphonies.

A similar, problematic music is that of Schönberg. As for the man, he appears to have lacked inventiveness in a musical sense, although he certainly possessed it in musical theory, having founded the twelve-tone system. In composition he started out to be a romantic, as in his early work *Verklärte Nacht*. Realizing he did not have inventiveness enough to create new along those lines, he devised his atonal system, which, operating on the basis

of juxtaposition of tones and resulting in interesting sound effects, requires no great inventiveness (compare Chapter 7).

A study of biographical and personality traits thus permits conclusions as to the geniality of the work, and its possible esteem by future generations.

36 THE DISTANT FUTURE

A glance into humanity's future was attempted in our discourses. We envisaged that a new subspecies might be developed by means of eugenics and planned Mendelian breeding, resulting in extraordinary qualities of that subspecies, similar to the genius of today. The outlook is by no means impossible; in fact, it is most unlikely that the present form of our species on our planet should be final. Details of this development cannot be given without venturing into the realm of guesses. One possibility stands out among others, and that is the coexistence of the new human subspecies with the old, instead of forthright supplantation. Such a coexistence offers interesting conjectures which we do not pursue further.

One final matter about the permanence of masterpieces. When we say, lasting, we do not necessarily mean, forever; our own solar system will not last indefinitely. What is then the prospective duration of that survival? It is a heart-warming thought that the creation of a genius, in contrast to nearly everything else on earth, will not perish. It may be said with confidence that as long as homo sapiens inhabits the earth, barring a major catastrophe which is unlikely, works of genius will also survive. There is no reason to assume that our great artistic and our basic scientific achievements will not retain at least some degree of fascination even for remote generations to come.

The situation might change quite radically if a new subspecies should supplant our present one. In this respect science and art would fare differently. It is nearly impossible to envisage the status of science under those circumstances: it might be on a level entirely different from our present one. By our present judgment, the science of the antiquity—we are thinking of exact sciences—was of little significance; there was no development worth speak-

ing of during the Middle Ages; science, as we know it today, is about four hundred years old. And these are only three thousand years altogether, a trifle in the history of the earth.

In the eyes of the new variant, our present science, the theoretical more so than the experimental, may appear partly incorrect; there will be much to be discarded. Even if certain parts will not be invalid altogether, they will appear paltry, insignificant. And there will be born new branches that today do not rank among the exact sciences at all, such as psychology, sociology and medicine, more or less empirical disciplines today.

In the light of such developments, which are not only a possibility, but rather certainty, the outlook on the permanence of our scientific geniuses and their work is a limited one. Only the very greatest will survive until those distant times; some might retain a historical significance only.

Our great works of art stand a better chance for survival, as mentioned. It is understandable that beauty is less perishable than scientific theories. Beauty cannot be erroneous. As mentioned before, we still appreciate the art of antiquity and derive artistic enjoyment from them. Of course, the time elapsed is short compared with the aeons we have in mind; it is thinkable that the emotional life of the new variant will be so different from ours that our problems and dilemmas dealt with in our art will appear incomprehensible and absurd to them, thus the value of those works might shrink to historical documents. All this is quite possible, even if for us not easy to imagine. We are apt to think that the beauty of the *Waldstein Sonata* or the frescos in the Sistine Chapel are truly imperishable, since they are among the greatest ever produced by the human species. We forget, however, that the value of even such masterpieces depends upon the ear and the eye, and if these latter change, the value also changes.

While the development of a new subspecies was considered in the foregoing, we have paid no attention to the possible extension of our sphere of interest to other planets with intelligent beings different from homo sapiens in various respects. Our mingling with such beings might interfere still more radically with our

traditions and our accepted appreciation of masterpieces of the past.

There is another, rather curious factor. While science develops continually, absorbing the previous states, assimilating them into a new status, and in this manner shrinks their original volume virtually to a small fraction, there is no such process going on in arts. A drama of Aeschylus has the same length (unless part went lost) as in the old days, none of Mozart's scores, of Titian's canvases have shrunk in size in the ensuing centuries. What will happen with all that volume of masterpieces in the future?

If the process goes on for, say, another ten thousand years, a drop in the ocean of time, the libraries will be overcrowded with books, the art institutes will have no place to accommodate all the valuable work, and the receiving capacity of concert audiences will be insufficient for all the compositions that had accumulated during the, alas, too long past. This must result in a devaluation of works of genius through no fault of anyone, merely by the crushing volume acquired by accumulation. This devaluation will take place even disregarding the possible changes in ears and eyes.

The final result of all these circumstances will be that only the very greatest of the masterpieces of art from the dim past will survive as the millenniums go by. Works, considered great today, might be relegated to history.

We have no intention whatsoever to close this essay in a pessimistic vein, on the contrary. These matters have been pointed out chiefly for two reasons. First, it is good to keep in mind that, because of the long times involved, even our most cherished works of genius, both in arts and in science, might one day lose part of their significance; their permanence in the future is a relative concept. Second, our restricted concept of genius throughout this book was to be given further justification by pointing out the probable survival of only the very greatest in the far future.

It is lucky that we do not necessarily have to look into such a distant future. A look into the next few thousand years is plenty. Because of our inherently limited capacities the considera-

tion of that span of time is more than enough to guide our views and actions. And it is from this viewpoint that we have attempted to discuss the mystery, genius, humanity's greatest asset.

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